

Welcome to the 2007 Hager General Catalogue

As we continue to expand our product range with new innovations we have taken the step to integrate all the Products and Brands into one catalogue. This should provide you with a convenient reference source for all our products and associated technical information.

This new Catalogue now includes the Hager, Ashley, Klik and Tehalit ranges.





















A number of new products have been added including, the Flush Consumer Unit, specifically designed to meet the requirements for Building Regulations Part M installations, a new range of Miniature Circuit Breakers with breaking capacities 10-15kA, and the Tebis TX range of intelligent building controls for commercial & residential applications. Additionally the energy saving Klik Digital connection system has been extended with new occupancy sensors that can be controlled via wall switches, and for the first time the range of easy to fit Tehalit perimeter cable management system has been included in the Hager catalogue.

This new Catalogue should provide you with a wide choice of products for Electrical Distribution for both Commercial and Residential applications in one easy to use document.

A handwritten signature in black ink, appearing to read 'Daniel Hager', with a stylized flourish at the end.

Daniel Hager

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Hager On-Line



What do you get?

Visiting www.hager.co.uk will provide you with the latest news about Hager products, website updates and recent case studies.

The hager website also gives information about the Hager, Ashley, Klik and Tehalit brands. The products and solutions section has been broken down into easy to navigate sections. Each product page provides general information and images to further explain product functionality and benefits.



One of the most useful sections on the website is the 'Downloads' section. You can download all catalogues, brochures and leaflets from Hager, Ashley, Klik and Tehalit ranges in PDF format. This also includes the latest Trade Price List. Also available for downloading are Press Releases and Images.



You can access contact details of various departments, such as telephone, fax and e-mail addresses for; National Sales, Project and Estimating Department and the Technical Support Department.

There is also a contact form for general enquiries, which we will endeavour to reply to within 48 hours.

As well as all the useful information mentioned you can also find details about 'Hager in the UK' and it's 'Quality and Services'.

Registration to the Hager website is free and offers great access to more information.

Why should you register?

Apart from benefiting from the above when you register you will be able to take advantage of many more services, such as

Technical Support as well as access to the technical downloads, the Applications Guide and you can look at information about Hager Training Courses and enrol for free. Additionally the interactive animations and e-tools section show how products work and show how their features can benefit you. There is also access to wallpapers and screensavers. When registering with www.hager.co.uk you can also opt in to receive the monthly Hager Newsletter.



Especially for Contractors!

If you are an Electrical Contractor in the UK you can benefit from creating your own website with Hager. It only takes 10 minutes to create using multiple-choice options, the website will then be added to Hager's Electrical Contractors directory at www.your-electrician.com. Hager's Electrical Directory is



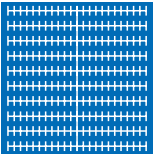
advertised to the whole of the UK. This is another tool your business can benefit from.

How to Register.

Simply visit www.hager.co.uk, under the 'Professional Users' menu selection, click 'Registration' and fill in the form and click 'Send'. Your information will be updated to our system within 48 hours. You can then benefit from being a registered user.

Website contact details

If you have any questions about the Hager website, contact the web team at info@hager.co.uk, or fill in the 'Contact Us' form under the services section at www.hager.co.uk if you are a registered user.



Faster Fitting for New Consumer Unit With Removable and Resealable Top Wall

The new consumer unit range is faster and simpler to install thanks to a removable top wall that reseals itself when replaced – a first for the UK. Installation of the new board needs just three tools, since it has features designed to simplify initial fixing, through cabling, to the final fitting of the devices.

The launch of our new range follows 2 years of development. Key to the development was the research conducted among electrical contractors. The practical features incorporated are a direct result of this research.

The new unit can be mounted on uneven walls with minimum visible distortion, thanks to flexible fixing points. These are angled to allow level alignment using the factory fitted spirit level within the consumer unit. A choice of multiple fixing points means the contractor can avoid concealed cables behind the unit.

A removable top wall saves time, since there is no need to thread cables through knockouts. The cable entries are simply snapped off using a pair of pliers, which saves time and also makes the installation safer with less chance of injury from a knife or jagged edges. Replacing the top wall reseals the unit to IP4X, thanks to a foam seal at the top of the unit, thus removing the need for grommets and silicon sealing.

The new range has more space between the devices and terminal bars than any other product. The neutral and earth bars are aligned with the devices at the top of the board



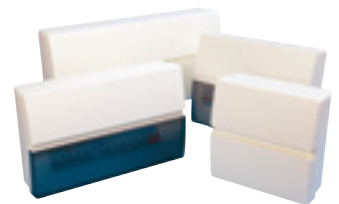
for easy access and there are no restrictions under the DIN rail to obstruct cable runs.

Recognising that the incoming cable is the hardest to dress and fix, we have introduced a clip-in meter tail kit into which the cable is terminated. Flexible links from this then feed into the incoming device.

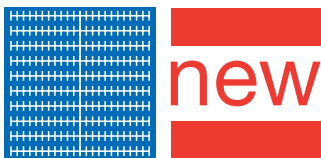
A full metal DIN rail minimises distortion and ensures that devices fit square in the unit and are not dislodged. A clip on the devices makes them easy to remove and replace, without releasing others from the busbar.

A number of consumer unit configurations are possible thanks to a snap-able busbar and the positioning of the terminal bars at the top of the board. A size 6 board with 18 outgoing ways for example, can be configured as a split load board with 1 + 17 outgoing ways to 13 + 5 outgoing ways or as a twin tariff board with 17 + 1 outgoing ways through to 9 + 9.

Finally a label can be mounted on either the cover of the unit or on the devices. There is a recessed section on the board for an RCD label to meet wiring regulations.



Our new range is the most contractor friendly on the market. It is full of practical features to aid installation. We also think that its design makes it the most aesthetic range available, with its modern clean lines and textured finish.



Flush Consumer Unit

The new range of flush fit consumer units that is up to 25 percent faster to fit in both solid and partition walls.

For partition walls, a flange and frame clamps the unit to the wall. There is no need for separate fixings, the unit simply slots into the prepared hole and the integral fixing screws are tightened.

With solid brick walls, the installer refits the flange to the sides of the back box and uses it as a fixing bracket to secure the base unit to the wall. This allows the base unit to be held well away from the edge of the blocks or bricks and the plastering can be levelled to the edge of the base. The front cover can then be fixed from the front.

There is a choice of 32mm or 25mm knockouts for the incoming cable. You can also fit the back box either way up, so the incoming cable can enter from the top or bottom from either the left or the right. Similarly for the outgoing cables two removable plates at the top and bottom of the box allow the choice of slotted, overlap or 20mm knockouts from either the top or the bottom.

When it comes to cabling, there is plenty of space between the devices and the terminal bars. The neutral and earth bars are aligned with the devices at the top of the board for easy access and there are no restrictions under the DIN rail to obstruct cable runs.

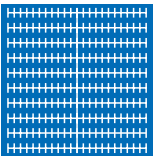
A full metal DIN rail minimises distortion and ensures that devices fit square in the unit and are not dislodged. A clip on the device makes them easy to remove and replace, without releasing others from the busbar.

Finally you can mount a label on either the cover of the unit or on the devices. There is a recessed



section on the board for an RCD label to meet wiring regulations.

The range includes 12 way and 18 way split load boards with a 100A switch and either a 63A or an 80A 30mA RCD. In addition there is a 12-way split load board with 6 + 6 outgoing ways, a 100A switch and two-80A 30mA RCD.



Protection and Energy Saving Solution for Tesco Homeplus

Contractor Essex Electrical Group Plc has used Hager distribution boards to provide both circuit protection and a simple energy saving control solution for Tesco's new Homeplus stores.

To date Tesco is trialling seven non-food stores under the brand Homeplus. In common with the group's corporate policy, the stores aim to minimise their use of energy. Each store has a sales area of more than 30,000 sq ft.

Hager distribution boards provide all the circuit protection. The company's contactors, time switches and photocells also provide lighting control. Lighting can account for more than 50% of the energy usage in a retail outlet so this was a key energy saving initiative.

Typically each store has a panelboard with a mains incomer of either 400A or 630A. This then feeds up to 12 sub-distribution boards, most of which are TP&N but with some SP&N boards.

The lighting control uses a combination of a master keyswitch, digital time switches and photocells all of which switch the luminaires via contactors. The lighting circuits are split so that 40% can be switched on for cleaning and/or shelf stacking, with the remaining 60% switched on when the store is open to the public.

The master key switch turns on 40% of the lighting at the beginning of the shift and then turns off all the lighting at the end of the day. Digital time switches switch on the remaining lights when the store opens and also turn off 60% of the lighting when the store closes to



the public, for shelf stacking and cleaning, and finally the remaining circuits at the end of the day.

In addition photocells turn the lighting circuits on or off in response to natural daylight levels. Roof lights maximise the amount of natural light available.

Comments Andy Collinge, contracts manager for Essex Electrical Group: "Tesco has opted for simple but effective control of their lighting in their new Homeplus stores. Using time clocks and photocells for automatic switching removes the responsibility from the staff and ensures an energy efficient solution.

"Using Hager's digital timers saved us a lot of installation time. Not only do they have a weekly cycle option to account for different opening times, but they also have an intelligent key that can be pre-programmed with the desired settings.

"For multiple installations with several lighting circuits that are the same, using these timers saved a lot of commissioning time. It also ensures that the different stores have the same lighting control for consistency and if the opening times need altering this can be done quickly and with minimum disruption."





Bus System Saves Cabling and Time for New Fast Fit Tesco Warehouse

Hulse Electrical has used Hager's Tebis bus system to meet a tight deadline for a complex lighting control solution at Tesco's new 265,000 square foot national distribution centre.

A busbar system supplies power to the 340 lighting circuits. Switching so many circuits using a hardwired solution would involve multiple cabling and several cable runs to switches. This would prove complex, inflexible to change and time consuming. The new distribution centre had to be completed in just 14 weeks.

The switching solution specified by Hulse Electrical used Hager's bus system Tebis. The bus line is a twisted pair cable that runs around the installation in a loop. The lighting circuits and switches are connected to the bus system via output and input devices.

In contrast using a hard-wired solution would involve running twin core cables from each circuit to a switch. Not only is this labour intensive, but it is inflexible if there are any changes or additions.

After installing the bus line, a PC commissioned the system. This involved assigning both switches and lighting circuits addresses and then programming the bus system so that certain circuits only respond to certain switches.

These switching combinations are easily changed or expanded in the future without any new cabling. If a new switch is needed then it is attached to the bus line and programmed into the system.

The bus system saves cabling and time for new fast fit Tesco warehouse. In addition to providing a flexible and fast fit solution for switching multiple lighting circuits, Tebis



can provide additional control options. In this instance if the mains power is lost a generator switches on to provide power. Tebis interfaces with the generator so that the lighting drops down to one-third normal levels to reduce the loading.





Local Contractor Showcases Smart Home Technology

Carmunnock based contractor Shaun McCarroll, of Electric Works Ltd, has turned to Hager's Tebis bus based system for a simple to understand building services control system to showcase Smart Home technology using his own home.

The Tebis system controls the lighting, underfloor heating and motorised curtains. It also interfaces with the burglar and smoke alarms.

McCarroll argues that while applying building automation technology to the home offers the end user several advantages, such as functionality, convenience and energy efficiency, the public wants a simple to understand system.

"In practice the general public are not used to push button controls or PC control when it comes to switching the lights on or turning the heating down. Using Tebis they can set different lighting scenes or switch multiple services using either a normal wall switch or a remote control." states McCarroll.

"I would not recommend a system that I do not have myself, so it makes sense to use my own home to demonstrate and sell such technology" he continues.

In addition to controlling the building services using a bus system, he has run data cabling throughout his 1920's cottage so that television and audio can be streamed to any room in the house.

Using Tebis he can supply various lighting scenarios for different rooms. In the living room, for instance, the lighting can be dimmed and the curtains drawn for watching the home cinema system. Similarly in the



bathroom a waterproof plasma TV can be watched while the lights are dimmed down or coloured lights can swathe the bathroom in amber.

On a more practical level, a single switch by the front door turns all off all the lights in the house and the heating down to economy level. On entering the house another switch turns the heating back on to comfort levels plus some lights to illuminate an entrance pathway – for example in the hall, kitchen and living room. McCarroll could also have a light switch in a child's bedroom that can turn on the bedroom, landing and toilet lights.

Linking the system to the burglar and smoke alarms, means that

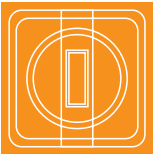
Tebis can also provide additional security for the homeowner. In McCarroll's house if the burglar alarm is activated all the internal and external lights turn on as an additional deterrent. Activating the smoke alarms will turn on the landing, stair and hall lights to illuminate an escape route.

Heating is controlled in each room by a separate thermostat, and can be switched between comfort levels and economy using the thermostat switch or the remote control. Having an efficient and controllable heating system has saved him an estimated £65 per month on heating bills.

Comments McCarroll; "Using a bus system such as Tebis means there are endless control



permutations. It is simple to install and commission. Most importantly for the end user it is simple for them to understand and control. Due to this they tend to use its full functionality and it is not merely technology for technology sake. Also control is easily added to or changed in the future with minimal or no recabling"



DVLA Klinks into Digital Lighting Control

Contractor Lorne Stewart has specified Hager's Klik DCS to meet the daylight linking lighting control specified by the DVLA for the refurbishment of its Swansea headquarters.

The ongoing refurbishment is due for completion in September 2007. Key to the specification is the improved working conditions for the 4000 staff and the environmental and cost benefits of linking the lights to both occupancy and natural daylight levels.

Consultants WSP detailed the exact lighting control required from the RID1 dimmable ballasts. These are to dim to 400 lux at desk height in office areas and to 300 lux in rest areas. Remote handsets can be used to dim the lighting to 150 lux at the touch of a button and wall switches in meeting rooms can turn the lighting off or manually dim up or down.

Using the Klik DCS system an occupancy sensor detects presence and operates the lights. As daylight levels increase the lights dim down automatically and eventually switch off if natural lighting levels are high enough. If no personnel have been detected for a period of 15 minutes the lights dim down to 10% over 30 seconds, stay at 10% for another 30 seconds and then switch off. On detecting presence the lights dim up to 100% and then dim to match the daylight levels.

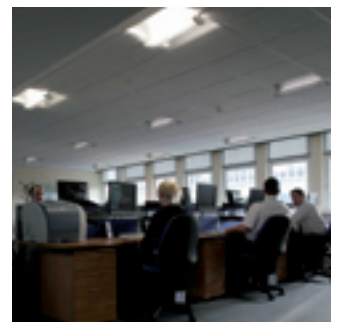
Lorne Stewart selected the Klik Digital Connection System because of its ease of installation and commissioning. The contractors do not need to change from standard installation practice and a simple hand held remote control programmer makes commissioning simple.



The Klik DCS system is based on a marshalling box with either 4, 6, 8 or 10 outgoing ways and occupancy sensors that incorporate daylight linking. Each box provides flexibility to control either one lighting circuit, or by two removing a copper link. Both normal and emergency digital light fittings simply plug into the box with the cable supplying both power and data in one connection.

Klik sensors provide the automatic lighting control. Either one or two of these sensors can be hard wired into the Klik DCS box depending on the number of lighting circuits to be controlled. These sensors combine both the occupancy sensing and the daylight linking control required

by the DVLA, whilst still offering the flexibility to override the system when necessary.





Emirates Stadium Klinks into Light

Electrical Contractor Goodmarriott & Hursthouse has used Hager's Klik LDS as a fast fit lighting installation solution for Arsenal's new Emirates Stadium, which has now reached practical completion.

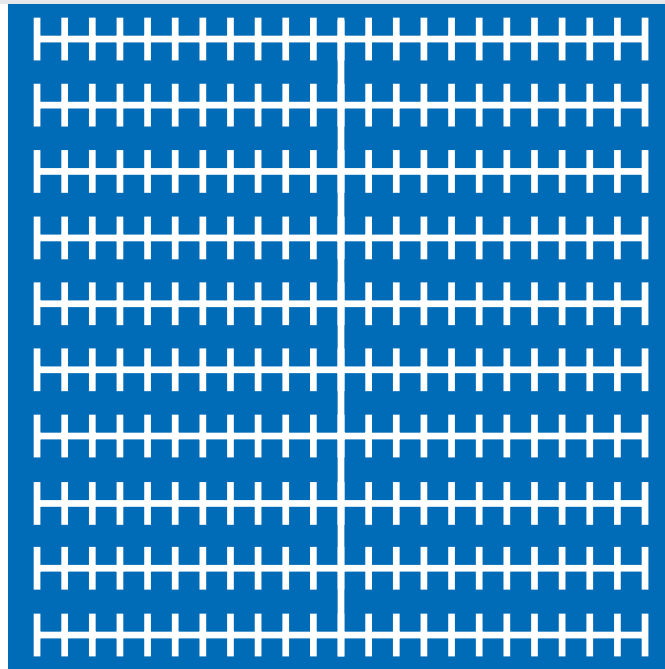
The Klik LDS marshalling boxes were used for the light fittings in the executive boxes, banqueting areas, restaurants, offices and large open plan rooms.

Goodmarriott & Hursthouse estimates that the system provided a 60% installation time saving since each marshalling box only needs wiring once at first fix. When other trades have left site 4, 6, 8, 10 or 12 luminaires simply plug in. Further time savings were realised at final fix since each luminaire is supplied with the Klik plug already attached.

Each Klik LDS box can supply either one lighting circuit, or, two by removing a copper link. Emergency fittings also plug into the system since each socket will accept four pins, with the fourth contact providing an auxiliary circuit for connecting to a battery.

Project manager for the electrical contractors, Colin Brunton reports two further benefits of using the system. First the electricians could inspect and test the installation before the ceiling went back up. In addition the ceiling void is congested with other services so using a single Klik LDS box to plug in several luminaires is simpler for both installation and for future maintenance.





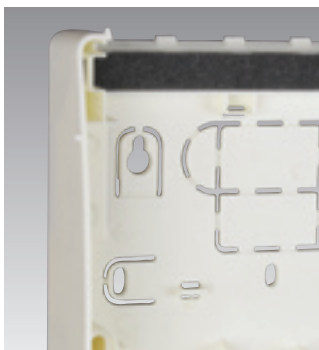
The new consumer unit range has been designed in partnership with contractors and homeowners, providing benefits to meet today's protection, control and electrical distribution needs.

From the outset, Hager worked closely with contractors and housing developers to provide an aesthetic design that would fit into both new and existing properties, whilst retaining a high level of protection for the equipment, the installer and for the user.

The new consumer unit from Hager is also suitable for small commercial installations such as shops, offices and hotels, where aesthetics are important.

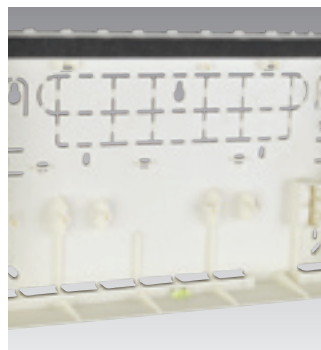
Hager Consumer Units Insulated and metal types feature downward opening doors, with the insulated type available in either plain or transparent door variants on many of the most popular unit sizes. Optionally, a key operated lock can be fitted to secure the lid over the devices to prevent tampering.

All variants are constructed from just six enclosure sizes. The smallest unit will provide a single way consumer unit whilst the largest will house 22 modules to provide a 20-way consumer unit.

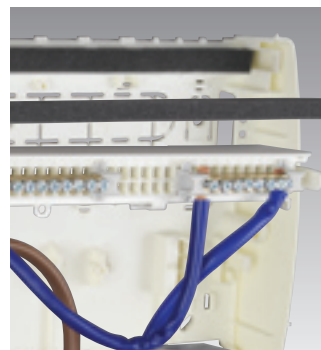


Large choice of fixing points.

Best in class cable space top side and back



Rear cutouts are optimised for size and position.



Top wall removes for easy cable access and reseals to IP4X using the two foam strips provided.



Snap-able busbar allows quick configuration of installation.