



Simple. Powerful. Common Sense Lighting Controls



B.E.G. Brück Electronic GmbH – a company with over 40 years of experience

Energy-efficient products combined with tradition

Founded in 1975, family-owned B.E.G., headquartered in Lindlar, Germany, has stood for quality and innovation for over 40 years. From the very beginning, our team's focus has been on satisfying customers. The B.E.G. product range is divided into six product lines: LUXOMAT®, LUXOMATIC®, LUXOMAT®net, SAFETYLUX®, CHRONOLUX® and B.E.G. SMARTHOME®. B.E.G. offers customers a wide product range, individual solutions, outstanding quality and personal service.

B.E.G. has an ever increasing number of branches and agencies in many countries of the world. Each branch or agency employs well-trained personnel offering the best support possible in all issues with respect to building automation.

Contents

The RATIO Platform.....	4
What can RATIO control	5
The Basic RATIO control components.....	7
RATIO Features.....	11
Programming and Set Up.....	14
Installation	17
3 rd party components with RATIO	19
How RATIO can be used.....	20
Using B.E.G. UNSYSTEM components with RATIO	22

The RATIO Platform

RATIO is a powerful, single space solution that uses the open DALI protocol for communication between devices. By using the DALI standard, RATIO can use devices from different manufacturers to extend the RATIO platform and add additional capabilities.

This flexible approach allows RATIO to support dimming through the use of DALI, 0-10v, ELV and PWM as well as traditional relay based switching.

The flexibility of the RATIO platform allows fixtures using any type of dimming method, from any fixture manufacturer to be individually addressable. You can now group and create scenes with fixtures using different control methods from different manufacturers, with zero modification to the fixture itself.



Control of protocols other than DALI



Specifying fixtures with DALI drivers is the simplest and most economical way to use RATIO. But at times whether its for projects where they will be reusing existing fixtures or where a DALI driver is not available for a preferred fixture, other dimming solutions may be incorporated. In these situations B.E.G. Controls supplies easy to install devices that accept a DALI digital command and then output a 0-10v, DMX, ELV or PWM signal. These low voltage devices can be mounted in, on or before each fixture to be controlled.

More than just lighting

RATIO allows for the control of more than just lighting fixtures. The integration of a B.E.G. Controls power pack with our zero cross, 20 amp relay, gives RATIO the capability to operate non-dimming lighting, electrical receptacles, ceiling fans and other devices.

Blinds & Shades

RATIO can also integrate blinds into the dimming scenes. Need to give a video presentation? RATIO allows you to group both the lighting and the blinds to dim the lights and lower the blinds with just one command. RATIO works with most major brands that accept either a maintained, momentary, or 0-10v signal.



Communication with other systems



Although designed for single spaces, RATIO can still work with your networked Building Management, Security and Fire Alarm systems. Contact our design department for details on interfacing with specific systems.

Building Management

For building management systems, RATIO can both signal that there is occupancy in the area and/or have the lighting activated by the building management system. Simple momentary inputs and outputs allow for integration with almost all BMS systems.

Security Systems

Lights in a RATIO controlled area can be programmed to go to full on, if a signal from the security system is received. Conversely the RATIO passive infrared sensors can pick up human movement in total darkness and can send an alert to the security system that there is movement in an area.

Fire Alarm

Using a simple momentary signal the fire alarm system can take over control of any area controlled by RATIO and bring the lights to the full on level.

RATIO Control Components



FLAT

With a lens less than a millimeter thick, the FLAT sensor still has a 29' detection range. Able to detect both motion and daylight the FLAT is perfect for offices, conference rooms and classrooms. Multiple FLAT sensor can be used in the same room to extend the coverage area



CONNECT

The CONNECT for RATIO has an incredible 78' detection range. A great solution for hotel meeting rooms, lecture halls, cafeterias and hallways.



RATIO Control Components

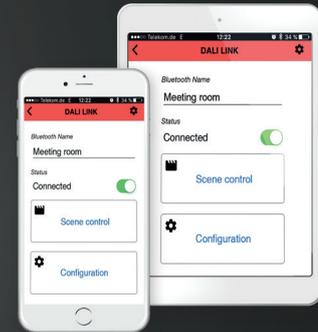


See the B.E.G. Controls Wallstation brochure for available styles and options



Push Button Controls

Using our unique PBM (Push Button Module) RATIO scenes and groups can be activated, turned on or off and manually dimmed through any momentary signal. This allows the designer/end user to choose any style of momentary switch appropriate for the application. The number of buttons specified can reflect the number of scenes out of the 16 available that you would like to make available to the end user or the public.



Smart Phone or Tablet

The RATIO app is available for both Android and iPhone and works with both phones and tablets. Any of the 16 available scenes can be activated including "hidden scenes" if the end user chooses to not have them available via the push buttons on the momentary switch. Tablets can be used as dedicated table top or wall mounted control in each space.

RATIO Control Components



Time Clock

Scenes and groups can also be activated by an astronomical time clock. Perfect for restaurants, places of worship and other areas where the lighting needs to change at a specific time



VOICE CONTROL

Using a wireless, momentary WiFi output device, scenes can be activated through an Amazon Echo or Google Assistant. By adding the relay to a control group in the Alexa or Google app, you can now say things like; “Alexa video scene” or “Alexa lower the blinds” or Alexa turn off the lights.”

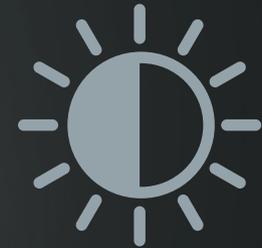


RATIO Control Features



Scenes or Groups

A single RATIO set up can control up to 25 lighting fixtures. These fixtures can be used in up to 16 unique scenes or groups in each area where RATIO is installed. Scenes can also include non-lighting elements like blinds and fans.



DAYLIGHT HARVESTING

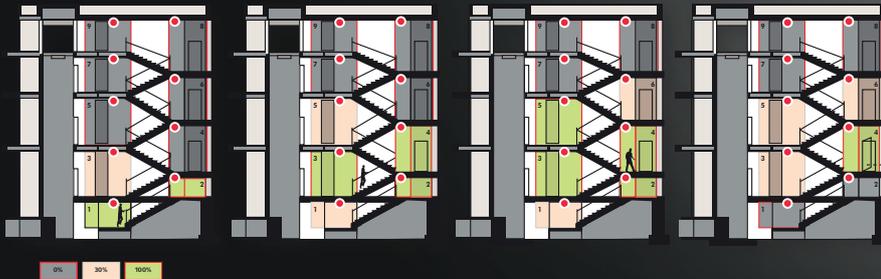
All RATIO sensors detect not only motion but also daylight. Multiple sensors can be placed in a single space and RATIO can be programmed to only respond to the light level signal from a sensor located in the daylight zone.

RATIO Control Features

Guide me

When RATIO is used in corridors or stairwells, you can take advantage of our unique Guide Me feature. Simply use multiple sensors in these areas. The sensors used for “Guide Me” all communicate and coordinate with each other. When you are in the detection zone of any sensor the lights in that area will be at 100% of their programmed light output, but fixtures directly behind and ahead of you will be at an orientation level of 30%.

Light fixtures outside of the areas directly adjacent to an occupied areas will be turned off. This allows RATIO to predict your movements, making sure you are never walking toward a dark space.



RATIO Control Features



Orientation Light PLUS

This feature allows you to set multiple time out periods for the lighting in a space. After the initial time out period, all or just some of the lighting will dim down to approximately 30%. The lighting will stay at this level until they are manually turned off or if there is no motion detected during the next time out period (20 – 30 minutes depending on the local code).

SOFT START PLUS

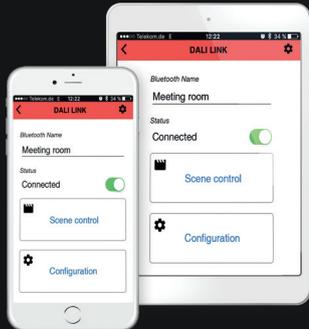
The lighting does not always have to come on to 100%. With Soft Start PLUS the lighting can be programmed to come on to an initial dimmed level, whether the lighting is activated by the sensor or a manual push button switch. After the lights are on the end user can then decide if they want to activate a scene or manually raise the light level by pressing and holding the button on the wall station.

Programming and Set Up

RATIO is designed to work right out of the box! After the lighting and the 3 core components (power supply, PBM and FLAT or CONNECT sensor) are connected and powered up the sensor begins to detect motion and light level and the momentary wall station will allow you to manually turn the lights on and off. If you leave the room without manually turning the lights off the sensor will turn them off after a standard 10 minute time out period. Also out of the box, RATIO is set to keep a constant 50 foot-candles in the space.

RATIO will automatically raise the LED lighting if there is not enough contribution from daylight and even dim the lights down or turn them off if there is sufficient lighting from the windows or skylights, providing full energy code compliance without any programming or commissioning!

“Full energy code compliance out of the box!”



B.E.G. Controls *Did you*

That you can easily add lighting scenes in this room. Well you can! So let's

Step 1
Download the RATIO app from the Google Play app store.



Itunes



Step 2
Watch our easy to follow in video download our instruction manual.



Video



RATIO Control Features

Do you know?

Did you know you can have up to 16 unique scenes in your room?

Let's get started!

Download from iTunes or the



Google Play

Watch the instructional video or read the manual.



Manual

Changing the Preset Settings

With RATIO there is no need for dials, push-buttons, dip-switches or other manual programming controls. RATIO is fully Bluetooth enabled. The RATIO programming and control app is available for both Apple and Android smartphones and tablets. Through the app, the contractor, agent or end user can easily change the occupancy time out period, daylighting level, or change the lighting from manual on to automatic on.

CREATING SCENES

Typically at the time of design and installation the end user will only have a rudimentary idea of how they want the lighting to be grouped and dimmed in the space. Knowing this, we've made the process of creating scenes by the end user extremely simple. Because manuals and paper work get lost, each RATIO kit includes a "post-it note" style leave behind sheet. After installation the contractor simply places the sheet on the wall next to the wall station. This leave behind contains links to download the software, links to video tutorials and step by step instructions on how to customize RATIO for their application.



begcontrols.com

Programming Guide Me, Orientation and Soft Start Features



The RATIO app walks you through step by step to set up these powerful features.
Get confused on have a question? Just call us! 770-349-6341

Installing RATIO



The core of the RATIO solution consists of just 3 simple components; the Bluetooth enabled push button module (PBM), the power supply and a FLAT or CONNECT sensor. At least one of each of these components must be present.

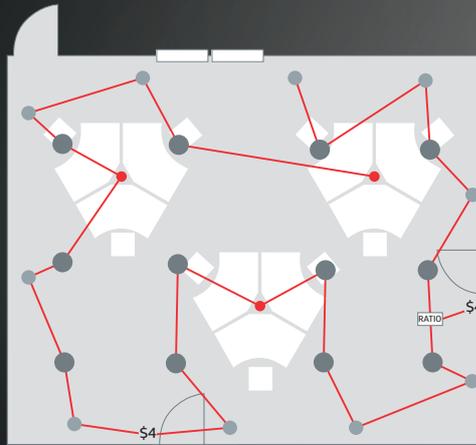
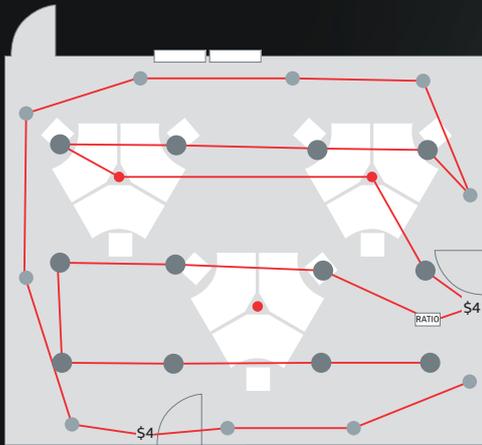
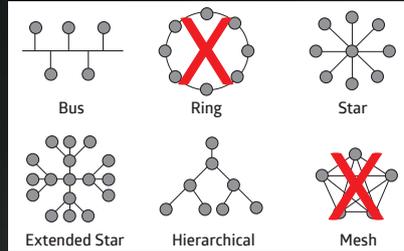
RATIO uses a simple 2-wire, non-polarized bus to connect all of the fixtures, RATIO components and most 3rd party devices. The two wires for the bus can be run in the same conduit or be a part of the same cable as main power!

And since the bus is non-polarized, the installer does not have to worry about landing the wires on the wrong ports! Devices can be installed using almost any topology making RATIO one of the easiest lighting control solutions on the market.

Installing RATIO

DALI Fixtures and RATIO

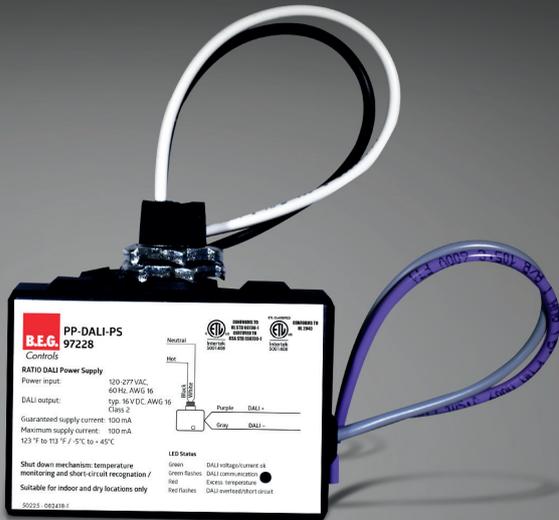
Using 100% DALI enabled fixtures is a powerful, quick and simple way to install RATIO. You simply daisy-chain 2 wires between all of the fixtures and the 3 RATIO components, in ANY order you want. Start anywhere, finish anywhere. It's that simple.



● Down light ● Pendant ● FLAT Sensor ● \$4 4 button station w/PBM  Power Supply (in junction box) — 2-wire bus



Adding 3rd Party and other B.E.G. Components



The RATIO platform allows you to use non-RATIO components to add features and capabilities, like time based scene control, 0-10v and other dimming protocols and control of non-DALI switched loads.

Astronomical Time Clock

A B.E.G. Controls certified and supplied astronomical time clock, combined with a PBM can be added to activate scenes at a programmed time. A restaurant for example may want the dining room lights to dim shortly after dusk or a church may want to have the lighting change right before a service.

With the addition of the Time Clock, the FLAT or CONNECT sensor can be temporarily disabled during business hours and then automatically re-enabled at closing. As long as employees are still working and moving the lights will stay on. Once the employees leave and the sensors stop sensing motion the lights will automatically turn off, after the programmed timeout period.

Other Dimming Protocols

DALI is a worldwide standard and there are numerous devices that accept a DALI command and then control the lighting using 0-10v, DMX, ELV or PWM protocols. B.E.G. Controls has tested and hand selected the best converters on the market and can supply them when needed.

Switching Non-dimming Lighting and Electrical Receptacles

A 20 amp, B.E.G. Controls PP-1-J power pack can be added to control non dimming fixtures, electrical receptacles, fans or other non-lighting loads.

Voice Control with Amazon Echo or Google Assistant

A momentary WiFi controlled relay can be wired to the PBM and controlled by an Amazon Echo or Google Assistant. You simply program the PBM for the desired scene and then use the Alexa or Google app to create the command for the relay.

Ways to use RATIO

Conference rooms

Conference rooms are usually the first thing that comes to mind when people learn about RATIO. No longer do we need to use a difficult to program, difficult to operate wall mounted architectural scene controller.

With RATIO all you need are the 3 basic components; the PBM, FLAT or CONNECT sensor and the power supply along with DALI fixtures. The wall controller can now look exactly the way the designer or end user would like. Any of the 16 available scenes can be controlled from the wall station or from a smartphone or tablet.

Large Meeting Rooms with Partitions

With up to 16 scenes you can easily create scenes for each space when the partitions are in place and additional scenes that regroup the lighting when the partitions are open. Hotels and other conference facilities can easily create custom scenes and make them available

via the wall stations or activated by the staff via a Bluetooth enabled tablet for each individual event.

Open Office Areas

Some staff members like it bright, some like it more dim, and one is sitting behind a pillar. Make them all happy. Easily adjust light levels in small areas to accommodate changing tasks and changing staff needs.

Stairwells and Hallways

The RATIO Guide me feature is the perfect solution for stairwells and hallways. Place a sensor on each landing or evenly spaced down a hallway and the lighting in any occupied area will be at 100%, with the lighting behind and in front of the occupant at an orientation level of 30%. As the person moves forward the sensors communicate with each other and the light levels are adjusted accordingly. No one ever moves towards a dark space with RATIO!



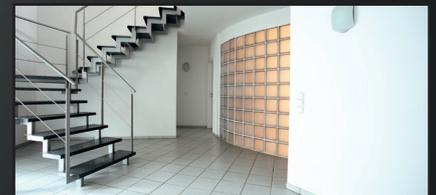
Design Assistance

Designing a solution using the **RATIO platform** couldn't be easier!

But if you would like assistance, we're here to help! We've created design packages complete with sample drawings, tech sheets and advice for almost any type of project. Contact us at any time and we'll be happy to send you out the package that corresponds with your project type.

We will also be happy to create custom drawings specific to your project at any time and always free of charge.

design@begcontrols.com



Other types of control.

UNSYSTEM

By B.E.G. Controls

Smaller areas in a building may not need all of the capabilities of RATIO. For those areas B.E.G. Controls recommends the use of our Unsystem Solution. Stand alone dimming and switching power packs combined with our award winning MINI and FLAT sensors along with our WAVE switch mounted sensors are the perfect compliment to RATIO. Restrooms, small offices, storage areas, etc. can all benefit from these simple to install, wirelessly programmable solutions.



Our wide range of controls solutions are the perfect compliment to RATIO



Elegant and
unobtrusive
“

B.E.G.



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