Energy, the right amount to the right place, at the right time.
Our customers:
The experts for energy efficiency solutions provide:

- Heating, cooling, ventilating, air conditioning and automation for buildings and thus create a pleasant environment for example, at work, in domestic areas, or in airport buildings for us.
Our customers:
The experts for energy efficiency solutions provide:

• Heating, cooling, ventilating, air conditioning and automation for buildings, at work, in domestic areas, or in airport buildings for us.

The human is in the center point

Energy, the right amount to the right place, at the right time.
Our customers

• Transform, provide and distribute energy carriers like water for heating and cooling so that our buildings function energy efficiently.
Our customers

• Prepare drinking water. On land and sea…
    ……so that we can live
Our customers

• Air condition and service the systems required for this, for example on cruise ships thus enabling a relaxing holiday
### Energy, the right amount to the right place, at the right time.

**The European building and building automation market**

<table>
<thead>
<tr>
<th>Country</th>
<th>Germany 2010</th>
<th>Western Europe EC15 2010</th>
<th>Eastern Europe EC4 2010</th>
<th>Total Europe EC19 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Million Euro</td>
<td>Million Euro</td>
<td>Million Euro</td>
<td>Million Euro</td>
</tr>
<tr>
<td>Year</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population in 000s</td>
<td>81,700</td>
<td>397,856</td>
<td>64,084</td>
<td>461,942</td>
</tr>
<tr>
<td>Total building</td>
<td>211,384</td>
<td>928,674</td>
<td>41,418</td>
<td>970,092</td>
</tr>
<tr>
<td>Building renovation</td>
<td>146,204</td>
<td>518,387</td>
<td>13,204</td>
<td>531,591</td>
</tr>
<tr>
<td>New building</td>
<td>65,181</td>
<td>410,501</td>
<td>28,224</td>
<td>438,560</td>
</tr>
<tr>
<td>Total residential</td>
<td>135,800</td>
<td>537,784</td>
<td>15,759</td>
<td>553,543</td>
</tr>
<tr>
<td>1-2 family dwellings</td>
<td>103,779</td>
<td>336,123</td>
<td>5,373</td>
<td>341,496</td>
</tr>
<tr>
<td>Residential renovation</td>
<td>32,021</td>
<td>201,663</td>
<td>10,383</td>
<td>212,046</td>
</tr>
<tr>
<td>New residential</td>
<td>33,160</td>
<td>208,690</td>
<td>17,833</td>
<td>226,523</td>
</tr>
<tr>
<td>Total non residential renovation</td>
<td>75,585</td>
<td>390,935</td>
<td>25,663</td>
<td>416,598</td>
</tr>
<tr>
<td>New</td>
<td>33,160</td>
<td>208,690</td>
<td>17,833</td>
<td>226,523</td>
</tr>
<tr>
<td>Therefrom</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buildings for education</td>
<td>2,234</td>
<td>26,194</td>
<td>1,456</td>
<td>27,650</td>
</tr>
<tr>
<td>Buildings for health</td>
<td>1,810</td>
<td>19,851</td>
<td>722</td>
<td>20,573</td>
</tr>
<tr>
<td>Industrial buildings</td>
<td>6,082</td>
<td>31,610</td>
<td>3,379</td>
<td>34,989</td>
</tr>
<tr>
<td>Storage buildings</td>
<td>4,408</td>
<td>13,966</td>
<td>1,721</td>
<td>15,688</td>
</tr>
<tr>
<td>Office buildings</td>
<td>4,743</td>
<td>35,468</td>
<td>3,010</td>
<td>38,478</td>
</tr>
<tr>
<td>Commercial buildings</td>
<td>4,563</td>
<td>39,371</td>
<td>3,919</td>
<td>43,290</td>
</tr>
<tr>
<td>Agricultural buildings</td>
<td>2,189</td>
<td>12,606</td>
<td>732</td>
<td>13,338</td>
</tr>
<tr>
<td>Miscellaneous non-residential buildings</td>
<td>7,131</td>
<td>29,540</td>
<td>2,897</td>
<td>32,437</td>
</tr>
<tr>
<td>Share: Building automation incl. valves, sensors, controllers ...(without chiller, boiler..) in %</td>
<td></td>
<td></td>
<td></td>
<td>1.85</td>
</tr>
</tbody>
</table>

**Quelle:** Euroconstruct 2010

EC15: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, The Netherlands, United Kingdom

EC4: Czech Republic, Hungary, Poland, Slovak Republic

10...15% Valves & actuators 1794...2692 Million Euro
Energy, the right amount to the right place, at the right time.

<table>
<thead>
<tr>
<th>country</th>
<th>germany 2010 Million Euro</th>
<th>western EC15 von EU %</th>
<th>eastern EC4 2010 Million Euro</th>
<th>total EC19 2010 Million Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1,8..3 % of the total building construction cost are automation company project business (without chiller, boiler..)

10..15 % of the building controls costs are valves and actuators

Quelle: Euroconstruct 12.2010

<table>
<thead>
<tr>
<th>Quelle: Euroconstruct 12.2010</th>
<th>3.911</th>
<th>17.180</th>
<th>766</th>
<th>17.947</th>
</tr>
</thead>
<tbody>
<tr>
<td>year</td>
<td>2010</td>
<td>2010</td>
<td>2010</td>
<td>2010</td>
</tr>
<tr>
<td>%</td>
<td>22%</td>
<td>96%</td>
<td>4%</td>
<td>100%</td>
</tr>
</tbody>
</table>

EC15: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, The Netherlands, United Kingdom

EC4: Czech Republic, Hungary, Poland, Slovak Republic

10..15% Valves & actuators 1794..2692 Million Euro
We help our customers to their success with V&A!

Bray Commercial always deliver

State-of-the-art,

High quality solutions,

coordinated with our customers,

that help to bring about the best possible energy optimization.

Energy, the right amount to the right place, at the right time.
The solution purchase price is agreed in detail with our customers.

Meaning that the costs, up to the point of applying the solution, for example:
• Construction and testing
as well as the costs that can follow, such as:
• Servicing costs and the extent of such.
Modes of payment, costs of preparation etc. all these are optimized in cooperation with our customers.
The solution purchase process is agreed upon with our customers.

Whether a customer is a national, European, ME or global operator, our global disposition in production and sales allows us to select the optimum logistical solution.

→ Reduced / optimized, cost-efficient stock on customer side up to no stock on customer side
→ Short delivery time with fast track option

Energy, the right amount to the right place, at the right time.
Bray China, Hangzhou

Bray Commercial EMEA (Krefeld/Germany)

forwarder (Shanghai)

Door to door incl. duty etc.

<table>
<thead>
<tr>
<th>order</th>
<th>production</th>
<th>transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>42 sea</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>21 train</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>6-10 air</td>
</tr>
</tbody>
</table>

Energy, the right amount to the right place, at the right time.
Energy, the right amount to the right place, at the right time.
Factories and branches (Extract), European head quarters (Krefeld)
European Bray commercial headquarters in Germany

Planned new bigger Germany Bray facility – an indicator of customer satisfaction

Energy, the right amount to the right place, at the right time.
Capabilities of European commercial competence center

Bray Armaturen & Antriebe Europa
A Subsidiary of Bray International, Inc.

Europark Fichtenhain A 13b
47807 Krefeld

Capabilities:

- Sales center
- Shipping center including stock (HVAC products of more than 1 Mio €), fast track possibility → sufficient stock on Bray side - optimized low stock on customer side
- Technical support and competence center
- Technical field support
- Training center – focused on local standards and application e.g. 230VAC, on side training also
- Repair center – short reviewing time, local support
- Assembling, customizing (CoO Germany for V&A combination)
- Quality Management (ISO 9001 since 1998)
- Link to development department in Houston and China → innovation

Energy, the right amount to the right place, at the right time.
Solution communication is a permanent process our customers and Bray Commercial.

Technical documentation
data sheets
fitting instructions
announcements
text for invitation to tender
2D-3D drawings etc.
as well as the application presentation and market information's are a part of the communication with our customers.

Energy, the right amount to the right place, at the right time.
Solution communication is a permanent process of our customers and Bray Commercial. Here you will find the required tools for your success:

www.bray-commercial.eu

Text for invitation to tender, 2D-3D drawings etc. as well as the application presentation and market information's are a part of the communication with our customers.

Energy, the right amount to the right place, at the right time.
The EN standard market
→ Europa (0.74 billion people) & China (1.3 billion people) &...
→ biggest and fastest growing market in the world

Bray valves and actuators
developed in accordance with the local market requirements.

Energy, the right amount to the right place, at the right time.
Products for the EN standard HVAC market

Our core business

The **BV10000 butterfly-valve** (wafer type), DN25 up to 500
developed especially for the needs of the EN standard HVAC market.

The **BL10000 butterfly-valve** (lug type), DN50 up to 500
developed especially for the needs of the EN standard HVAC market.

The **butterfly-valve** in conjunction with the Bray **S70M** actuator offers an optimally powered combination.

*Energy, the right amount to the right place, at the right time.*
The Bray **RA damper actuator** in conjunction with **butterfly valves** up to DN 200.
Universal mounting brackets allow the usage of standard damper-actuators from a variety of manufacturers. The nominal sizes range from DN25 up to DN 80/DN 200 depending on the torque.

Hand lever versions and geared versions are available for manual operation.
The threaded ball valve ST2 series:

Actuated brass control valve with stainless steel ball, 2-way and 3-way PN40 female thread nominal sizes Rp1/2 to Rp2, for the flow control of water and water glycol (max.50%) in HVAC systems.
Next upgraded of product range

**S70M:**
- IP67
- **flexibility** (linkages) in order to replace other actuators on … butterfly valves
- S70 M and linkages for high performance valves

**BV10000:**
- Super undercut butterfly valve DN150 & DN200 low required close/off torque of 40Nm at 350kPa pressure
- Butterfly valves for drinking water application

First step “BV20000” series

**Ball valves:**
- Flanged ball valves DN65……DN100
- RA and linkages with Bray ball valves
Extended product range; End 4 Quarter 2015

Rotary actuator **RA series** the full size air damper program

Spring return

None spring return

*Energy, the right amount to the right place, at the right time.*
Energy, the right amount to the right place, at the right time.
Energy, the right amount to the right place, at the right time.

4 different housings; 2 different voltage only

Torque

- 60 Nm (ca.10m²)
- 40 Nm (ca.8m²)
- 20 Nm (ca.4m²)
- 10 Nm (ca.2m²)
- 5 Nm (ca.1m²)
- 2 Nm (ca.0.4m²)

Voltage

- 19 .. 29 V
- 85 .. 265 V

AC/DC