NATURAL SMOKE EXHAUST (RWA) AND VENTILATION

Manual fanlight opening systems
Electric drive and control solutions
Ever since 1907, the Gretsch-Unitas Group has stood for safe and convenient opening and closing of windows. The group has sustainably shaped the development of the market with groundbreaking innovations and continuous further developments in opening systems.

Products from Gretsch-Unitas have been highly prized for more than a century for their tested quality and safety. Mature technology and intelligent electronics do not just focus on single products but rather on individual system solutions.

Expertise for window security. We assist you in all the phases of implementing your individual smoke exhaust and ventilation solution. Trained specialists with extensive knowledge of all the relevant standards and regulations as well as fast and reliable service allow for cost- and application optimised solutions for all types of buildings.

In the area of natural smoke and heat extraction, we provide long-term security that not only functional reliability but also a high standard of planning and cost reliability will be provided with tested and certified system solutions.
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Statutory measures regarding thermal insulation (e.g. the German Energy Saving Ordinance – EnEV) are leading to increasingly well-insulated building shells, thus largely preventing a climatic exchange through diffusion between the internal and external environments.

Sophisticated and effective ventilation systems are therefore extremely important in creating a climate that is as natural as possible and that supports health, even in energy-efficient buildings.

The Gretsch-Unitas Group offers you individual solutions for convenient, everyday room ventilation using different fanlight opening systems, chain drives and spindle drives. Whether it be an inward or outward-opening Top-Hung or Tilt-Only sash, pitched, triangular, round or segmental arched windows – the ventilation systems from the GU Group leave nothing to be desired.
The VENTUS F 200 manual fanlight opening system from the Gretsch-Unitas Group allows an extremely wide range of window shapes to be opened and closed – irrespective of whether they are rectangular bottom-hung windows, with arched or segmental arched heads, or pitched or triangular windows.

Also, window projections and reveals are mastered with ease. Steplessly adjustable tilt positions guarantee perfectly controlled room ventilation and permit large opening widths.

Advantages at a glance

- Flat-form fanlight opening stay for vertically installed Tilt-Only windows
- Cost-efficient control of several sashes using a vertical or corner drive-gear with crank
- Ideally suited for windows offering limited mounting space
- The stay can be easily hinged and unhinged, e.g. for window cleaning
System features

- Intensive room ventilation because of large opening widths of up to 200 mm
- Ideally suited for small sash heights from 250 mm
- Suitable for sash weights of up to 80 kg
- Compact modules for fast and easy mounting
- Steplessly adjustable sash brackets for overlap heights from 0–25 mm
- A wide range of operation possibilities: hand lever, vertical or corner drive-gear with crank, transmissions (transom-mullion transmission / flexible transmission)
- Flat-form fanlight opening stay for vertically installed timber, PVC or metal Tilt-Only windows
- Individually adapted tilt position by reducing the opening widths
- Drilling jigs for all application ranges
- No visible fixing screws
- The internal locking device inside the stay ensures maximum surface pressure on the window, thereby meeting today’s requirements for water tightness, acoustic insulation and energy savings

One system – many applications

Tilt-Only sash  Pitched window  Round arch and segmental arch windows  Flexible transmission  Transom-mullion transmission
System design

The GU VENTUS fanlight opening system consists of:

1. F 200 fanlight opener stay
2. Sash bracket for attachment to the sash
3. Corner-drive for force transmission
4. Connecting rods and rod guides
5. Cover profiles
6. Hand-lever for opening and closing
   *alternatively: hand lever operation with vertical or corner drive-gear*
7. Additional restrictor and cleaning stays, e.g. EURO-SOLID
Special solutions

Top-Hung sash, outward-opening
Completely pre-mounted stay unit for all outward-opening Top-Hung windows with opening widths up to 200 mm.

Additional locks
Additional face-fixed, vertical locks for a secure, lateral gasket pressure with tall Tilt-Only sashes.
Optional locking with a catch engaging in the concealed UNI-JET central locking system. This provides a visually appealing solution for greater security and increased burglar inhibition.

EURO-SOLID restrictor and cleaning stay
As stipulated by the RAL directives:
In addition to the standard fanlight hardware, Tilt-Only sashes must be fitted with catch stays.
EURO-SOLID restrictor and cleaning stays prevent damage that might arise from incorrect attachment of the opening stays. Moreover, they provide great convenience when cleaning as the sash is held in the desired position.

Technical data

VENTUS F 200 | Operation via hand lever or crank | Tilt-Only window

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Sash width (mm)</th>
<th>Min. sash height (mm)</th>
<th>Opening width (mm)</th>
<th>Max. sash weight (kg)</th>
<th>Travel (mm)</th>
<th>Space requirement (mm)</th>
</tr>
</thead>
</table>

[1] For overlap heights 0 – 25 mm
[2] Factory setting
[3] Operation with special hand lever on request
With the VENTUS F 200 fanlight opening system and ELTRAL electric drive, room ventilation is performed in a convenient and cost-effective manner.

Ideally suited for vertically installed, inward and outward-opening Tilt-Only or Top-Hung timber, PVC or metal windows, whether rectangular, oblique, round arched or segmental arched.

The steplessly adjustable tilt position guarantees perfectly adjusted room ventilation.

The control of several sashes with just one drive opens up an additional potential for economic savings.

Advantages at a glance

- Additional potential for economic savings thanks to controlling several sashes with just one drive
- Microprocessor for automatic, variable opening width setting
- Optimal motor protection thanks to electronic limit stop switch and overload cut-off
System features

- Simple mounting, horizontal or vertical (rh / lh)
- With position and function display
- Optional for increased security: actuation of the concealed UNI-JET central locking system via a connector
- Adjustable travel for variable opening widths
- Anodised aluminium housing
- Individual or group control via ventilation push-button
- ELTRAL S electric drive also suitable for use at louvre windows

Technical data

**VENTUS F 200 | operation with ELTRAL S 230 electric drive | Tilt-Only window**

<table>
<thead>
<tr>
<th>Drive</th>
<th>Max. sash width (mm)</th>
<th>Min. sash width (mm)</th>
<th>Min. sash height (mm)</th>
<th>Max. sash weight (kg)</th>
<th>Max. weight of glazing (kg/m²)</th>
<th>Space requirement Drive (mm)</th>
<th>Max. number stays</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTRAL S 230</td>
<td>3600</td>
<td>410</td>
<td>630</td>
<td>80</td>
<td>40 [1]</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>39</td>
<td>3</td>
</tr>
</tbody>
</table>

[1] Depending on “dimension S” (= distance from sash centre of gravity to middle of hinge) and sash width

**ELTRAL S electric drives**

<table>
<thead>
<tr>
<th>Drive</th>
<th>Nominal voltage (V AC)</th>
<th>Nominal force (N)</th>
<th>Nominal current (A)</th>
<th>Adjustable stroke (mm)</th>
<th>Speed (mm/s)</th>
<th>Cut-off</th>
<th>Connection</th>
<th>Dimensions L x W x H (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTRAL S 230 E</td>
<td>110-230</td>
<td>1200</td>
<td>0.15</td>
<td>50 / 70 mm [1]</td>
<td>0.9</td>
<td>Electronic</td>
<td>Connector plug for 2-core connecting cable</td>
<td>210 x 36 x 76</td>
</tr>
<tr>
<td>ELTRAL S 230 L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>End position switch-off</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[1] Depending on “dimension S” (= distance from sash centre of gravity to middle of hinge) and sash width
The range of different chain drives, spindle drives and rack and pinion drives for timber, PVC or metal windows offers individual solutions for comfortable everyday ventilation, when the windows are not accessible for the user.

The window type does not matter: whether rectangular, inward-opening Top-Hung or Tilt-Only sashes, outward-opening Top-Hung windows or special windoes such as Parallel-Projecting and Projecting Top-Hung windows – virtually any application is possible with the solutions from the GU Group.

Modern chain drives perfectly harmonise with the facade architecture thanks to their appealing, compact and flat design.

Spindle drives ensure convenient, electromotor-driven room ventilation on heavy and large skylights.

### Advantages at a glance

**ELTRAL K chain drives**
- Simple and fast installation – face-fixed or concealed
- An array of mounting styles enable virtually any installation situation on inward or outward-opening windows
- Variable opening width setting
Compact size

The integrated electronics enables the synchronous control of several drives

Suitable for use with all Turn-Only, Tilt-Only, Top-Hung, Parallel-Projecting, Projecting Top-Hung, Horizontal- or Vertical-Pivot windows and skylights

Ideally suited for small sash heights from 250 mm

With intelligent microprocessor controller

With integrated limit stop and overload cut-off

Reduced closing speed (max. 5 mm/s) for the last 50 mm – corresponds to protection class SK3*

* In accordance with Machine Directive 2006/42/EC
**Electric drive and opener systems (230 V)**

**Overview of variants**

**ELTRAL chain drives**

K25, K30, KS 30/40, K60

- Modern and visually appealing solutions due to optimum adaptation to the window architecture
- Versatile mounting variants:
  - On frame or sash
  - Face-fixed and concealed
- For inward and outward opening top-hung, bottom-hung, side-hung and skylights
- Solo and synchro variants
- Simple combination with locking drives

**ELTRAL chain drive**

KS 30/40 radio

- With integrated radio receiver
- Radio remote control
- Compact size
- Integrated microprocessor control unit
- Automatic limit stop switch
- Independent of overlap dimension
- Integrated overload cut-off
- Suitable for small sash heights from 250 mm
- Variable travel adjustment in 3 stages

**ELTRAL spindle drives / rack and pinion drives**

S80, Z45

- Easy opening and closing of large, heavy skylights or facade openings
- Integrated limit stop and overload cut-off
- Slender drives
- High push forces up to 1600 N
- Solo and synchro variants
## Electric drive and opener systems (230 V)
### Technical data

<table>
<thead>
<tr>
<th>Designation</th>
<th>Chain drives</th>
<th>Spindle drives / rack and pinion drives</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTRAL</td>
<td>K25</td>
<td>K30</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V AC ± 15%</td>
<td>110/230 V AC ± 15%</td>
</tr>
<tr>
<td>Pull/push force (N)</td>
<td>250 [1]</td>
<td>300</td>
</tr>
<tr>
<td>Nominal current (A)</td>
<td>0.2</td>
<td>0.16</td>
</tr>
<tr>
<td>Travel speed (mm/s)</td>
<td>8.0</td>
<td>11.2</td>
</tr>
<tr>
<td>Opening width / travel (mm)</td>
<td>200 300 400</td>
<td>300 – 500 variable adjustable</td>
</tr>
<tr>
<td>Protection type (IP)</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>Duty ratio (%)</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Locking force (N)</td>
<td>3000</td>
<td>2000</td>
</tr>
<tr>
<td>Operating temperature (°C)</td>
<td>-5 to +75</td>
<td>-5 to +65</td>
</tr>
<tr>
<td>Suitable for skylights</td>
<td>-</td>
<td>[1]</td>
</tr>
<tr>
<td>Synchronous control</td>
<td>optional</td>
<td>optional</td>
</tr>
<tr>
<td>Concealed installation</td>
<td>■</td>
<td>-</td>
</tr>
<tr>
<td>Dimensions LxHxD (mm)</td>
<td>Lx26x41</td>
<td>456x43x60</td>
</tr>
<tr>
<td>Connecting cable</td>
<td>Silicone 3.0 m / 4-core</td>
<td>Silicone 2.0 m / 3-core (Solo) 2.5 m / 5-core (Synchro)</td>
</tr>
</tbody>
</table>

[1] Depending on travel / force-displacement curve
[2] Larger travel widths available on request
[3] Mechanical, up to 4 drives
Electrical controllers (230 V)

Components

**Ventilation central control units**
LZ1, LZ6
- Control of 24 V DC drives for the purpose of ventilation
- Combination of several ventilation functions and groups, such as wind/rain detector, time switch, building management technology via a central station
- For individual and/or several rooms
- Output current: 2.5 A / 24 A / 30 A

**Ventilation push-button**
- Stepless, manual operation of RWA drives and ventilation drives for daily ventilation
- Available as surface-mounted or concealed variant
- Different versions
  - OPEN – STOP – CLOSE
  - Rocker switch
  - Spring-operated key switch

**Rain / wind control**
- For weather-dependent, automatic ventilation control
- Automatic closing of windows in case of rain or wind
- Wind and rain sensor set including fixings

**Room thermostat**
- Automatic ventilation control based on the ambient temperature (via integrated thermostat)
- For connection to ventilation push-button input
- Operating voltage: 24 V DC (± 5 %)
- Adjustable; adjustment range: 0–30°
- Switch capacity: 230 V AC, 5 A
- Protection class: IP30
- Surface-mounted plastic housing, white (W x H x D): 74.5 x 74.5 x 25 mm
Electrical controllers (230 V)

Components

42 FH hand-held radio transmitter
- For 230 V AC electric drive

FAJ 6 UP radio actuator
- In conjunction with 42 FH radio transmitter
- For installation in flush-mounted boxes
- 230 V AC, 50 Hz

Timer
with day/week programme and power reserve
- Operating voltage: 230 V AC, 50 Hz
- For time-related opening and closing of ventilation sashes/leaves/flaps
- Potential-free changeover contact for connection to RWA central control units
- Contact rating: max. 16 A
- Suitable for combination with temperature-dependent control devices, e.g. for controlled night cooling (taking into account winter and summer time)

Power supply units
230 V AC / 24 V DC
- For connecting 24 V DC drives for room ventilation
- Power-up / connection possible (directional change)
The complete smoke and heat exhaust ventilation system as a one-stop service

Smoke and heat exhaust ventilation systems

Fires and the associated flames and smoke still pose the greatest threat to people and buildings. For this reason, it is extremely important that the smoke be extracted quickly and reliably. As part of fire prevention layouts to keep escape and rescue routes free from smoke, the Gretsch-Unitas Group offers a wide range of coordinated system components – from electric motor drives to RWA central control units plus an extensive range of accessories.
Protection goals and mode of functioning
Part of preventative fire protection

Preventative fire protection does not fully guarantee the prevention of fires in buildings. However, it is possible to achieve protection targets through the use of smoke and heat exhaust ventilation systems.

Protection targets of a smoke and heat exhaust ventilation system

**Protection of persons** (= unassisted rescue)
- Securing escape and rescue routes by smoke exhaust
- Clear visibility for people escaping
- Saving people’s lives

**Fire fighting** (= assisted rescue)
- Low-smoke extinguishing routes
- Rapid and targeted extinguishing by the fire brigade
- Reduced risk for deployed personnel

**Property protection**
- Preventing full-scale fire and follow-on fires
- Reduction of massive building damage by smoke

Smoke generation without smoke and heat exhaust ventilation
If smoke and heat is not removed, the resulting accumulation of combustion gases and dangerous oxides put the health of the building occupants severely at risk. In addition, an excessive build up of heat can block emergency exits and escape routes and in the worst case cause the building to collapse.

Smoke emission with smoke and heat exhaust ventilation
A smoke and heat exhaust ventilation system removes smoke and heat by drawing it upwards. A low-smoke layer forms above the floor through which fleeing building occupants and rescue workers can move. This also reduces damage to the building by heat.

Controlled extraction
The removal of smoke is based on the principle of thermal uplift: supply air openings in the wall and exhaust air openings in the upper part of the wall or ceiling area ensure that smoke is removed in a reliable and controlled manner.
Functional principle
Component assignment

Advantages at a glance (networked RWA)

Economic solution through easy and secure connection (cascading) of up to five RWA central control units:

- Five physically separate ventilation groups
- Networked ventilation push-button function for all RWA central control systems
- Line monitoring via internal data bus
- Small cable cross-sections due to local assignment

Legend

- **RWA 24V line**
- **Ventilation 24 V line**
- **Internal bus line**
- **Line monitoring**
- **Wind and rain sensor line**
- **Central ventilation push-button**
RWA drives and RWA opening systems guarantee reliable smoke exhaust in the event of a fire and provide natural everyday room ventilation. With the GU range of chain drives, spindle drives and locking drives and combined opening and locking systems, there is a hardware solution for any individual application.

With their compact design and pleasant appearance, chain drives from the Gretsch-Unitas Group are an ideal solution for the fast, electromotor-driven opening of exhaust air apertures and for room ventilation.

The drives are surface-mounted and perfectly suited to any window type and style thanks to their flat design. Depending on the window profile, the drives can also be installed in a concealed manner.

The wide range of drives and mounting bracket sets enables virtually any installation situation and installation type.

Advantages at a glance

ELTRAL K chain drives

- Simple and fast installation – face-fixed or concealed
- An array of mounting styles enable virtually any installation situation on inward or outward-opening windows
- Compact, requiring little space
- Large opening width even with small sash heights
- Small dimensions
- Variable opening width setting
ELTRAL K chain drives – system features

- Face-fixed or integrated solutions individually adapted to window size, weight and material
- The integrated electronics enables the synchronous control of several drives. This means that even large and heavy window elements can be moved easily
- The combined use of chain drives and locking drives (in conjunction with the UNI-JET central locking system) offers additional weather protection and optimal tightness for large-format windows
- Reduced closing speed (max. 5 mm/s) for the last 50 mm – corresponds to protection class SK3
- Integrated microprocessor control unit
- Small dimensions
- With integrated limit stop and overload cut-off
- Suitable for use with all Turn-Only, Tilt-Only, Top-Hung, Parallel-Projecting, Projecting Top-Hung, Horizontal- or Vertical-Pivot windows and skylights

Planning notes

The following questions and planning notes are intended as a decision-making help for selecting the proper system components of an RWA installation.

- How large is the floor area of the room or staircase to be equipped with an RWA system? In other words, which geometrically or aerodynamically efficient opening area is demanded by the building authority? Are there any obstacles such as lintels or special profile thicknesses to be taken into account?
- Which type, size and number of window(s) and which opening direction are to be considered when planning the RWA installation?
- How large and how heavy are the windows? Are the drives and fastening elements suited to resist the forces arising on the windows and to achieve the opening widths required?
- Which mounting method is preferred (face-fixed or concealed assembly)?
- Are the supply and exhaust air openings freely accessible, thus requiring extra safety (burglary preventing) installations?
- What other influences are to be expected?

RWA systems are an imperative necessity in public buildings for saving people's lives!

ELTRAL K chain drives – technical data

### ELTRAL chain drives

<table>
<thead>
<tr>
<th>Drive</th>
<th>Nominal voltage (V DC)</th>
<th>Push/pull force (N) [1]</th>
<th>Current consumption (A)</th>
<th>Opening width (mm)</th>
<th>Concealed installation</th>
<th>Protection class</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTRAL K25</td>
<td>24</td>
<td>250</td>
<td>0.8</td>
<td>200 – 800</td>
<td>–</td>
<td>Class 3 [2]</td>
</tr>
<tr>
<td>ELTRAL K30</td>
<td>300</td>
<td>350</td>
<td>0.9</td>
<td>300 – 500</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>ELTRAL K35</td>
<td>600</td>
<td>1.2</td>
<td>100 – 800</td>
<td>200 – 1000</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

[1] Depending on lift/force-displacement curve
[2] For power-operated windows in accordance with Machinery Directive 2006/42/EC
Overview of variants

**ELTRAL chain drives**
K25, K30, KS 30/40, K35, K60

- Modern and visually appealing solutions due to optimum adaptation to the window architecture
- Versatile mounting variants:
  - Installation on frame or sash
  - Face-fixed and concealed
- For inward and outward opening top-hung, bottom-hung, side-hung and skylights
- Solo and synchro variants
- Simple combination with locking drives

**ELTRAL locking drives**
VAN, VA25, OA, VA35, VA 1, VA 2

- Higher holding force in larger windows due to additional locking point
- Concealed and face-fixed mounting solutions
- Increased tightness against driving rain
- Additional protection against unauthorised access
- In conjunction with the UNI-JET central locking system: any number of locking points possible for secure opening, closing and locking of large window sashes
- With integrated closing sequence control
**Electric drive and opening systems (24 V)**

**Overview of variants**

---

**ELTRAL spindle drives**

S80, S160

- Easy opening and closing of large, heavy skylights or facade openings
- Integrated limit stop and overload cut-off
- Slender and aesthetic drives
- High push forces up to 1600 N
- Solo and synchro variants

---

**RWA opening systems**

1000, 1050

- Automatic opening and closing of inward and outward opening top-hung, bottom-hung and side-hung sash systems
- Large opening widths with small travel distances even for small-height sashes
- With integrated closing and opening sequence control
- With electromechanical sash locking (locking and unlocking)
  - Face-fixed, single or double
  - As square-spindle drive
  - Driven by electric motor via the internal central locking system
- Solo and synchro variants
# Electric drive and opening systems (24 V)

## Technical data

<table>
<thead>
<tr>
<th>Designation</th>
<th>Chain drives</th>
<th>Spindle drives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable for use in facades</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Tilt-Only sash, inward-opening</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Top-Hung sash, outward-opening</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Suitable for use with skylights</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Tested and approved according to EN 12101-2</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

### Operating voltage

- 24 V ±15% (24 V ±15%)

### Push force (N)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>250</td>
<td>300</td>
<td>300</td>
<td>350</td>
<td>600</td>
<td>300</td>
<td>800</td>
<td>1600</td>
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</table>

### Pulling force (N)

<table>
<thead>
<tr>
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<td>300</td>
<td>300</td>
<td>350</td>
<td>600</td>
<td>300</td>
<td>800</td>
<td>1600</td>
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### Nominal force/torque (N)/(Nm)

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>200/400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
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### Nominal current (A)

<table>
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<tr>
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<tr>
<td>0.8</td>
<td>0.9</td>
<td>0.8</td>
<td>1.0</td>
<td>0.7</td>
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<td></td>
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</table>

### Breaking current (A)

<table>
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<tbody>
<tr>
<td>1.0</td>
<td>1.2</td>
<td>1.0</td>
<td>1.4</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Travel speed (mm/s)

|----------|-----|-----|--------------|-----|-----|-----|-----|

### Opening width / travel (mm)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>300</td>
<td>400</td>
<td>500</td>
<td>600</td>
<td>800</td>
<td>300</td>
<td>500</td>
</tr>
</tbody>
</table>

### Protection type (IP)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>32</td>
<td>30</td>
<td>32</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Duty ratio (%)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>30</td>
<td></td>
<td></td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Locking force / locking moment (N)/(Nm)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3000</td>
<td>2000</td>
<td>1000</td>
<td>3000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Operating temperature (°C)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>-5 to +75</td>
<td>-5 to +65</td>
<td>-5 to +75</td>
<td>-5 to +75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Synchronous control

- Optional

### Concealed installation

- – – – – – –

### Dimensions LxHxD (mm)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lx26x41 [2]</td>
<td>456x43x60</td>
<td>386x38x58</td>
<td>Lx35x35 [2]</td>
<td>Lx40x56 [2]</td>
<td>Ø 36 x (342 + lift)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Connecting cable

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicone 3 m / 3-core</td>
<td>Silicone 2 m / 3-core (Solo)</td>
<td>2.5 m / 5-core (Synchro)</td>
<td>Silicone 2 m / 3-core (Solo)</td>
<td>2.5 m / 5-core (Synchro)</td>
<td>Silicone 2.5 m / 3-core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

[1] Due to its plastic case, the ELTRAL KS 30/40 drive is not approved for RWA use within the EU!
[2] Depending on travel / force-displacement curve
[3] Solo / Synchro
[4] Depends on fixing
### Locking drives

<table>
<thead>
<tr>
<th>VAN</th>
<th>VA25</th>
<th>OA</th>
<th>VA35</th>
<th>VA-1 R/4</th>
<th>VA-2/12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<tr>
<td></td>
<td>■</td>
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<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
</tbody>
</table>

- 24 V ±15%  
- 24 V ±15%  
- 600 / –  
- / 10  
- 600 / –  
- 1000 / –  
- 600 / –  

<table>
<thead>
<tr>
<th>RWA opening systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWA 1000 with S100</td>
</tr>
<tr>
<td>RWA 1050 with S60</td>
</tr>
<tr>
<td>1.5 0.4 0.8 0.6 0.8</td>
</tr>
<tr>
<td>1.5 0.4 1.1 0.8 1.4</td>
</tr>
<tr>
<td>6.0 2.8 20°/s 3.2 4.2</td>
</tr>
<tr>
<td>18 / 35 adjustable 17 / 36 adjustable 90° / 180° adjustable 18 –</td>
</tr>
<tr>
<td>43 32 65</td>
</tr>
<tr>
<td>30 20</td>
</tr>
<tr>
<td>850 1000 22 1000 5000 [4]</td>
</tr>
<tr>
<td>-5 to +75 -5 to +65 -5 up to +75</td>
</tr>
<tr>
<td>353x25x25 473x25x25 156x40x83.5 420x35x35 1200/2000x35x35 (256+travel) x ø 36</td>
</tr>
</tbody>
</table>

- Silicone  
- 2 m / 3-core  
- 3.0 m / 2-core  
- Silicone  
- 3.0 m / 4-core  
- Silicone  
- 2.5 m / 4-core  
- Silicone  
- 2.5 m / 2-core  
- Silicone  
- 3.0 m / 2-core
Adequately sized supply air openings are always required to ensure that the smoke and heat extraction system functions safely and reliably. By means of a kind of “chimney effect”, these boost the thermal uplift and thus ensure that smoke gases are drawn upwards and extracted more quickly.

The supply air opening must be 1.5 times larger than the area of all exhaust air openings in the space concerned. The supply air opening must also be fully located in the low-smoke layer.

The ELTRAL TA 60 door drive makes it possible to use swing doors in entrance areas for SHEV supply air as well, at the same time as maintaining escape route security.

Functions at a glance

- Smoke exhaust: fast and reliable smoke exhaust in the event of fire via the extraction apertures by the automatic supply air opening in the door
- Passage convenience: the doors can be opened without any counterforce in everyday use, because the ELTRAL TA 60 door drive is inactive in everyday use
- Burglar protection: high degree of security through the use of SECURY automatic multi-point locks, the series 19 motor-driven lock or MTRS motor-driven shoot-bolt lock
- Panic function: escaping from inside is possible at any time (EN 179 / EN 1125)
Functional principle

In conjunction with the multi-point locks SECURY 19 or GU-SECURY Automatic with A-opener, or with the series 19 motor-driven lock (or MTRS motor-driven shoot-bolt lock for 2-leaf doors), this drive solution not only achieves the main “door” function but also other functions such as compliance with safety and fire protection requirements, without impairing passage convenience during everyday operation.

The ELTRAL TA 60 door drive is suitable for use on 1- and 2-leaf doors – also at emergency exit or panic doors according to EN 179 / EN 1125.

Suggested components

1 ELTRAL TA 60 door drive
2 Push bar
3 SECURY multi-point lock
4 Door handle

Technical data

<table>
<thead>
<tr>
<th>Drive</th>
<th>ELTRAL TA 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage</td>
<td>24 V DC ± 15%</td>
</tr>
<tr>
<td>Pull/push force</td>
<td>200 N / 600 N</td>
</tr>
<tr>
<td>Nominal current</td>
<td>0.8 A</td>
</tr>
<tr>
<td>Max. switching current</td>
<td>3 A</td>
</tr>
<tr>
<td>Opening angle related speed</td>
<td>3°/s</td>
</tr>
<tr>
<td>Opening torque</td>
<td>180 Nm / 216 Nm (continuous / maximum)</td>
</tr>
<tr>
<td>Closing torque</td>
<td>72 Nm</td>
</tr>
</tbody>
</table>
Electrical controllers (24 V)
RZ25 / RZ50 / RZ75 compact control units and modular control units

RWA central control units reliably control and monitor all connected ventilation and fire protection components (e.g., automatic detectors, manual alarms, electric drives) and supply them with power.

In the event of a fire, the central control units ensure the fast opening of smoke exhaust apertures in order to evacuate toxic fumes. They are therefore of central importance in preventative fire protection.

The GU Group offers a wide range of RWA central control units, from compact control units to expandable modular control units. Accessories and enhancements offer a high degree of planning flexibility.

Advantages at a glance (compact control units)

- Straightforward reliable connection of up to five control units to form five physically separate ventilation groups
- Comfortable and clear status, error and fault signalling via LED indicators
- Wide range of adjustment and application functions
- RZ50 / RZ75: with integrated evaluation of rain and wind detectors
RZ compact control units – system features

- Compact, robust steel housing
- Regulated output voltage
- Relay outputs for alarm and faults
- Can be used for both smoke exhaust and everyday ventilation
- Integrated backup batteries guarantee 72-hour operation in the event of a power failure
- Electronic monitoring of cables leading to drives and alarm devices
- Wide range of adjustment and application functions:
  - Automatic ventilation ‘CLOSE’ with programmable time selection
  - Dead man’s switch function in ‘OPEN’ and ‘CLOSE’ direction
  - Runtime limitation for ventilation, adjustable
  - Integrated, acoustic alarm signalling device with switch-off function
  - Automatic closing of windows in case of power failure
  - Selection of the drive running direction in the event of an alarm

Planning notes

The following questions and planning notes are intended as a decision-making help for selecting the proper system components of an RWA installation.

- Have the current consumption values of all drives to be controlled by the central control unit been added together? This total motor current must be provided by the central control unit.
- Is automatic triggering through temperature rise or smoke formation useful in addition to manual operation?
- Should inputs from rain / wind detectors be considered?
- Are alarm or failure reports to be transmitted elsewhere?
- Have the cross-sections of the supply lines been adapted to the required mass flows?

RWA systems are an imperative necessity in public buildings for saving people’s lives!

RZ compact control units – technical data

<table>
<thead>
<tr>
<th>Control unit</th>
<th>Nominal voltage (V DC)</th>
<th>Nominal/output current (A)</th>
<th>Ambient temperature range (°C)</th>
<th>Maximum number RWA push-button 'HSE'</th>
<th>Smoke and heat detector</th>
</tr>
</thead>
<tbody>
<tr>
<td>RZ25</td>
<td>24</td>
<td>2.5 / 3.2</td>
<td>-5 up to +40</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>RZ50</td>
<td>24</td>
<td>5.0 / 6.5</td>
<td></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>RZ75</td>
<td>24</td>
<td>7.5 / 8.4</td>
<td></td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
Overview of variants

**Electrical controllers (24 V)**

**RWA compact control units**
RZ25, RZ50, RZ75
- Control unit for drive and opener systems
- For use in stairwells
- With 2.5 A / 5.0 A and 7.5 A nominal current
- Signal reception from the fire detectors (automatic/manual) for immediate opening of the smoke exhaust apertures
- Monitoring and coordination of functions as well as possible faults
- Emergency power supply on power failure for at least 72 hours
- Control of the daily ventilation function

**RWA modular control units**
RZM240, RZM480
- Control unit for drive and opener systems
- For use in large and complex buildings
- For individual project-specific solutions
- With 24 A or 48 A nominal current
- Varied RWA and ventilation group possibilities
Electrical controllers (24 V)
Manual and automatic alarm devices

RWA push-button 'HSE'
- Electric manual control device for manual alarm release
- On-wall, lockable plastic housing or on-wall metal housing
- Signaling the operating statuses via illuminated indicators
  - Stand by
  - Alarm
  - Interference

Available in the colours:
- Metal
- Synthetic material

Smoke detector / heat detector
RMD / WMD
- Smoke or heat detectors for automatic alarm release
- Smoke detectors (scattered light detector) acc. to EN 54, part 7
- Wide variety of applications and monitoring range
- High level of functional reliability
New opening types and window shapes to cater for the special aesthetics of the facade

Special solutions for facades

Gretsch-Unitas combine special components, exclusively engineered for individual projects, with components from their standard product range. In this way, the requirements for novel opening types and shapes of windows can be met whilst retaining unique aesthetic appeal, while the costs for the fabricator remain totally competitive.
Special solutions for facades
Parallel-Projecting, Projecting Top-Hung and Turn-Only windows

Modern architecture places very high demands on the design and function of facades. We make the corresponding solutions happen in partnership with planners, system houses, metalworkers and fabricators – by using our worldwide tried-and-tested GU standard hardware with innovative components developed in-house for individual projects by our engineers, for example.

Using our system solutions for the facade, aesthetic customised solutions can not only be implemented but also reliably and cost-effectively brought in line with the applicable standards and regulations. After all, individually designed facades incorporating Gretsch-Unitas technology are not just architecturally appealing, they also satisfy the highest of expectations with respect to functionality, ventilation, thermal insulation and burglar protection.
Parallel-Projecting windows

Parallel-Projecting windows are used where the elegant visual effect and homogenous appearance of a glass facade should be retained even when the windows are opened in different ways. In contrast to conventional bottom-hung or Tilt&Turn windows, the window surface is not swivelled in relation to the frame, but is moved out in an orientation that is parallel to the glass facade.

Furthermore, this opening method is also suitable for achieving natural ventilation concepts because of the steplessly controllable opening widths.

In comparison to conventional Tilt-Only windows, Parallel-Projecting windows can obtain a much higher rate of air exchange with the same opening width. It is advantageous that this opening method – like all outward-opening windows – does not take up any space in the interior.

Projecting top-hung window

The window sash dips downward slightly when opening outward and remains in any opening position. The projecting top-hung function in windows offers considerable functional and aesthetic advantages in many building projects. The external appearance of the full glass facade can be made extremely homogenous by using this window.

Turn-Only window

Increased requirements on the weight and dimensions of side-hung windows demand new, creative solutions.

The challenges concerns implementing these new window dimensions in accordance with the aesthetic requirements of the architect. Solutions such as with concealed hardware or even delicate, high load-capacity hinges are called for in the demanding building envelope nowadays.

Note

All drive and opening systems presented on pages 14 and 15 (ventilation) / pages 24 and 25 (smoke exhaust) can be used for window solutions shown above.
Motor-driven Tilt&Turn window
Barrier-free construction in accordance with DIN 18040

The role played by barrier-free living in new-build and conversion projects is increasing in significance, which places high demands on planning and execution. In response, Gretsch-Unitas supplies coherent system solutions that combine a high degree of comfort and intelligent security with the objectives of barrier-free living.

Windows are tilted for ventilation. Already with standard-sized windows, the opening and closing (especially of a tilted window) requires some physical effort, which is not ‘barrier-free’. The new K18 DK system solution from GU enables comfortable, electrically powered ventilation via a Tilt&Turn window. This means electrically powered tilting and closing of the window via push-button or hand-held transmitter.

The window can be opened to the Turn-Only position manually at any time, e.g. for cleaning or inrush airing, through the use of an intelligent controller and decoupling mechanism.

The hardware and locking elements are not visible due to combination of the new UNI-JET SCF fully-concealed Tilt&Turn hardware with the ELTRAL K18 DK chain drive and VAN DK locking drive with concealed mounting.

Advantages at a glance

- No visible hardware and locking elements
- When the button is pressed, the window opens to the tilt position, and when the button is held pressed, the chain of the drive decouples to allow the window to be opened manually to the Turn-Only position
- Can be used for all timber, PVC and metal windows independently from the profile system
- The optional add-on module can be used to ensure that the Turn-Only function can only be triggered by authorised users (e.g. via transponder)
- Optionally with locking and opening monitoring striker (VdS class B)
System features

- No visible hardware and locking elements due to combination of the new UNI-JET SCF fully-concealed Tilt&Turn hardware with the ELTRAL K18 DK chain drive and VAN DK locking drive with concealed mounting
- Adjustable opening widths, also for subsequent travel adjustments (chain length)
- With superordinated control usable for night-time cooling
- The VAN DK locking drive provides secure gasket pressure
- From inside the room, the drives can be released from their closed position via mechanical emergency release at any time and in a non-destructive manner (e.g. in the event of a power failure)
- Intelligent decoupling mechanism and controller for authorised users: the chain can be disengaged at the push of a button to switch from the Tilt-Only to the Turn-Only position and open the window manually
- Sash weights up to 200 kg

System design

The K18 DK GU-system solution for motor-driven Tilt&Turn windows consists of (example shows concealed hardware and locking elements):

1. ELTRAL K18 DK chain drive
2. VAN DK locking drive, electromotor-driven locking and unlocking via the internal central locking system
3. UNI-JET SCF concealed hardware system

Note

All Tilt&Turn hardware systems from the Gretsch-Unitas Group can be used for the face-fixed system solutions.

ELTRAL K18 DK chain drive – technical data

<table>
<thead>
<tr>
<th>ELTRAL K18 DK chain drive</th>
<th>Operating voltage (V DC)</th>
<th>Push force (N)</th>
<th>Nominal current (A)</th>
<th>Dimensions W x H x L (mm)</th>
<th>Adjustable opening widths (mm)</th>
<th>Connection cable (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24</td>
<td>up to 180</td>
<td>0.32</td>
<td>28x28x310</td>
<td>80, 100, 160, 210</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Since 2006, EN 12101, part 2 has been applicable throughout Europe as the basis for testing natural smoke and heat exhaust ventilation devices. A proof of usability acc. to EN 12101, part 2 must be provided in Germany for all smoke exhaust systems that are required under building regulations (regulated building products = approved under building regulations and carrying the CE mark).

As a result, only completely tested system solutions – referred to as NSHEVs – are allowed to be used in vertical facades, comprising:

1. Window system profiles
2. Glazing and gaskets
3. Window hardware (stays, hinges, etc.)
4. Drive unit incl. fixing material
The Gretsch-Unitas Group provides you with a wide selection of NSHEV system solutions for aluminium profiles from well-known system suppliers based on the standardised Euro-groove, as well as timber and timber-aluminium systems.

Application ranges of GU NSHEV system solutions

- Inward and outward opening Tilt-Only, Top-Hung, Turn-Only and Projecting Top-Hung windows
- Sash dimensions up to 3000 x 3000 mm (W x H)
- Sash weights up to 250 / 150 kg (aluminium / timber)
- Best aerodynamic efficiency values: Cv values
- High resistance (wind loads); depending on sash format up to 3000 Pa
- Can also be used for everyday ventilation
- Everything from a single source: drives, hardware and an extensive product range comprising central stations, RWA pushbuttons ‘HSE’, fire detectors and other components

Select the appropriate solution from an extensive range of approved chain drives, locking drives and RWA opening systems.

GU NSHEV system solutions for facades

Approved aluminium systems and profiles with standardised 15/20 Euro-groove

Approved timber / timber-aluminium systems and profiles with Euro-rebate
Exclusion of liability

The information provided in this publication consists of product descriptions. This is general information based on our experience and tests and therefore does not take any specific application into account. No claims for compensation can be made on the basis of the product descriptions.

Although we have made every attempt to ensure the information provided here is accurate, it is non-binding. It should be adapted to the respective construction projects, usage and specific on-site demands.

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