

**Centro-System for centralised ventilation, in accordance with DIN 18017-3**

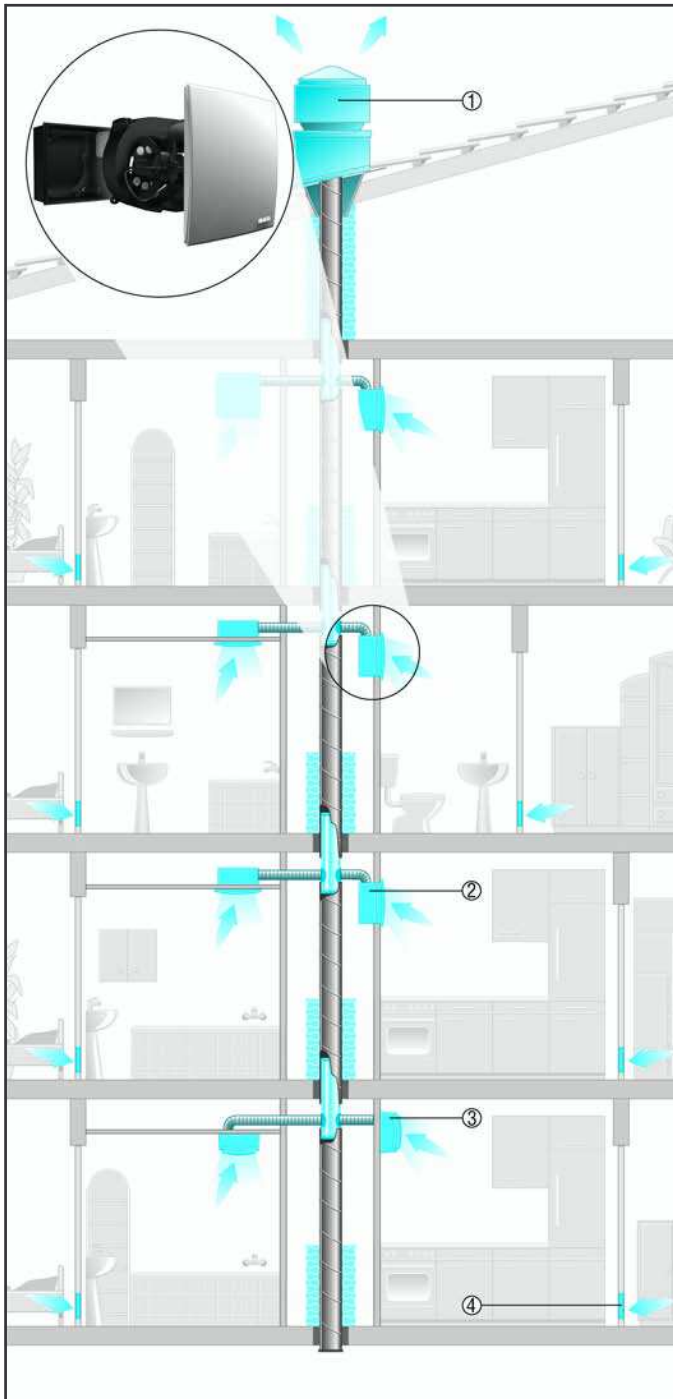
**Application areas:**

- Multiple family units, bathrooms, WC, kitchens, storage rooms

**Functional description**

- A central fan extracts stale, damp air from the bathroom and kitchen through the exhaust air elements. Draft-free, outside air flows into the apartment.
- The pressure controller holds the central fan's airstream pressure constant.

**The main system components**



Exhaust air element  
Recessed-mounted



Exhaust air element  
Surface-mounted



Recessed-mounted housing  
ER-UP..



Centrifugal roof fan  
ERD



Pressure controller



Supply air element



- ① ERD Centrifugal roof fan
- ② ER-UP Recessed-mounted housing with exhaust air element recessed-mounted Centro
- ③ Exhaust air element surface-mounted Centro
- ④ MLK Door ventilation grille



## Short description

- Recessed-mounted solution.
- 2-level electrical switch for basic and demand-based ventilation.
- Very quiet:
  - In the bathroom only exhaust air valve.
  - Motor in the roof fan.
- Easy assembly:
  - Integrated fire and smoke protection and sound insulation.
  - Recessed-mounted housing, identical to the ER single-duct fan range.

## Application examples

- Bathroom
- Kitchen
- Multiple family unit
- Day room
- Dining room
- Flat occupying the whole of one floor
- Low energy house
- Room without window

## Features

- Exhaust air element with cover and filter for installation in recessed housings.
- Can be used with Centro-System for centralised ventilation.
- Fire protection identical with MAICO ER single-room ventilation.
- No cold smoke barriers required.
- No additional sound absorbers required.
- Trouble-free filter exchange without using tools.
- It is possible to rotate the cover by  $\pm 5^\circ$ , to compensate for housings which have been fitted at an angle.
- The housing has easy to install snap-in exhaust air elements.
- General official approval depending on the recessed-mounting housing.
- Certificates of approval on request or on our home page - [www.maico.de](http://www.maico.de).
- Shaft level difference according to DIN 4109, tested by IAB Oberursel (The Institute for Acoustics and Building Physics in Germany).

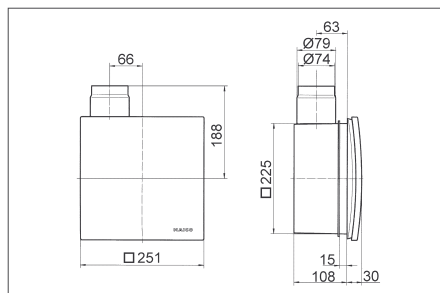
## Centro-E exhaust air element

- Exhaust air element with electro-thermal servomotor.
- For basic and demand-based ventilation.
- Pressure controller for central fan required.
- Electrical plug connection for quick installation of the exhaust air element in the housing.
- MAICO Centro-E exhaust air elements have IP X5 degree of protection and can be installed in area 1 in accordance with DIN VDE 0100-701, even with water jets.
- Protection class II.
- VDE-GS Mark of conformity.

## Centro-M exhaust air element

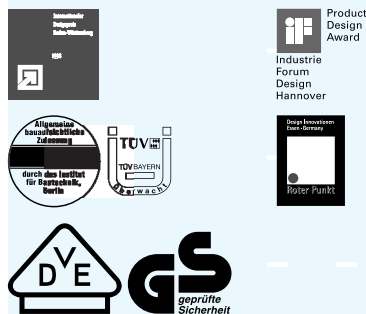
- For centrally modifiable volumetric flow.
- Fixed setting of exhaust air element.
- MAICO Centro-M exhaust air elements do not have any electrical connection and can therefore be installed in all areas, in accordance with DIN VDE 0100-701.

## Dimensions [mm]



Article	Art. No.	Model	Air flow volume m <sup>3</sup> /h	Power consumption	I <sub>Max</sub>	T <sub>Max</sub> at I <sub>Max</sub> °C	Sound pressure level dB(A)	Filter class	Degree of protection (IP)
CENTRO-M	0084.0182	manual	65	–	–	40	33/26	G2	–
CENTRO-E	0084.0183	electrical	65	6	0.9	40	33/26	G2	X5

Recommended accessories	CENTRO-M	CENTRO-E	see
Door ventilation grilles	MLK	MLK	p. 54
Pressure controllers	CENTRO-P, CENTRO-PE, CENTRO-PT, CENTRO-PTE	CENTRO-P, CENTRO-PE, CENTRO-PT, CENTRO-PTE	p. 50
Supply air elements	ZE 45 F white ZE 10 T, ZE 10 IB	ZE 45 F white ZE 10 T, ZE 10 IB	p. 84
Pressure tubings	CENTRO-PP	CENTRO-PP	p. 50
Air filters, replacement	ZF 60/100 bulk container ZF 60/100	ZF 60/100 bulk container ZF 60/100	p. 56
Recessed-mounted housings	ER-UP/G ER-UPD ER-UPB ER-UPB/R ER-UPB/L ER-UPB/U	ER-UP/G ER-UPD ER-UPB ER-UPB/R ER-UPB/L ER-UPB/U	p. 39
Flexible steel ducts	SFR 80	SFR 80	p. 52
Supply air elements, replacement filter	ZEF 10 T, ZEF 10 IB, ZEF 45 F	ZEF 10 T, ZEF 10 IB, ZEF 45 F	p. 84
Supply air channels	ZEK 45 F	ZEK 45 F	p. 84



## Details

- Accessory p. 50
- Wiring diagram p. 237

## Features

- Surface-mounted design exhaust air element for apartment kitchens, bathroom and WC.
- Can be used with Centro-System for centralised ventilation.
- Minimum volumetric flow 30 m<sup>3</sup>/h.
- Fire protection identical with MAICO ER single-room ventilation.
- No cold smoke barriers required.
- No additional telephony sound absorbers required.
- With K90-18017 maintenance-free fire protection shut-off device against spread of fire.
- Housing can be turned, so the exhaust socket can be connected on the upper left or right main duct side.
- Trouble-free filter exchange without using tools.
- DN80/DN75 metal exhaust socket with air-stream operated metal backflow preventer.
- General official approval, Approval no.: Z-51.1-45.
- Certificates of approval on request or on our home page - [www.maico.de](http://www.maico.de).

- Shaft level difference according to DIN 4109, tested by IAB Oberursel (The Institute for Acoustics and Building Physics in Germany).

### Centro-E-APB exhaust air element

- Exhaust air element with electro-thermal servomotor.
- For basic and demand-based ventilation.
- Pressure controller for central fan required.
- Electrical plug connection for quick installation of the exhaust air element in the housing.
- MAICO Centro-E-APB exhaust panels have IP X5 degree of protection and can be installed in area 1 in accordance with DIN VDE 0100-701, even with water jets.
- Protection class II.
- VDE-GS Mark of conformity.

### Centro-M-APB exhaust air element

- For centrally modifiable volumetric flow.
- Fixed setting of exhaust air element.
- MAICO Centro-M-APB exhaust air elements do not have any electrical connection and can therefore be installed in all areas, in accordance with DIN VDE 0100-701.



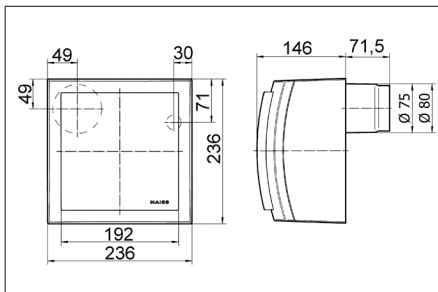
## Short description

- Surface-mounted solution.
- 2-level electrical switch for basic and demand-based ventilation.
- Very quiet:
  - In the bathroom only exhaust air valve.
  - Motor in the roof fan.
- Easy assembly:
  - Integrated fire and smoke protection and sound insulation.
  - Recessed-mounted housing, identical to the ER single-duct fan range.

## Application examples

- Bathroom
- Kitchen
- Multiple family unit
- Day room
- Dining room
- Flat occupying the whole of one floor
- Low energy house
- Room without window

## Dimensions [mm]



Article	Art. No.	Model	Air flow volume m <sup>3</sup> /h	Power consumption	I <sub>Max</sub>	T <sub>Max</sub> at I <sub>Max</sub> °C	Sound pressure level dB(A)	Filter class	Degree of protection (IP)
CENTRO-M-APB	0084.0184	manual	65	-	-	40	33/26	G2	-
CENTRO-E-APB	0084.0185	electrical	65	6	0.9	40	33/26	G2	X5

Recommended accessories	CENTRO-M-APB	CENTRO-E-APB	see
Door ventilation grilles	MLK	MLK	p. 54
Pressure controllers	CENTRO-P CENTRO-PE CENTRO-PT CENTRO-PTE	CENTRO-P CENTRO-PE CENTRO-PT CENTRO-PTE	p. 50
Supply air elements	ZE 45 F white ZE 10 T, ZE 10 IB	ZE 45 F white ZE 10 T, ZE 10 IB	p. 84
Pressure tubings	CENTRO-PP	CENTRO-PP	p. 50
Air filters, replacement	ZF 60/100 bulk container ZF 60/100	ZF 60/100 bulk container ZF 60/100	p. 56
Flexible steel ducts	SFR 80	SFR 80	p. 52
Supply air elements, replacement filter	ZEF 10 T, ZEF 10 IB, ZEF 45 F	ZEF 10 T, ZEF 10 IB, ZEF 45 F	p. 84
Supply air channels	ZEK 45 F	ZEK 45 F	p. 84



## Details

- Accessory p. 50
- Wiring diagram p. 237

Pressure controller  
 Centro



**Model**

- Centro-P: With integrated pressure cell.
- Centro-PE: With external pressure cell.
- Centro-PT: With integrated pressure cell and timer .
- Centro-PTE: With integrated pressure cell and timer.
- Pressure controller with integrated pressure cell.
- Can be used with Maico Centro-ER system for centralised ventilation.
- Automatic control of the underpressure at different operating states.
- The motor voltage is controlled steplessly through phase angles.
- Only for single-phase asynchronous motors.
- Robust plastic housing.
- With see-through lid and terminal box.
- Green LED display: Ready for operation
- Red LED display: Fault.
- Display of the current pressure value.
- Display of the motor voltage.

- With on/off switch.
- Pressure controller with external pressure cell.
- Connection of external pressure sensor over telephone cable.
- Pressure controller with integrated pressure cell and timer switch.
- Timer switch for operation with reduced pressure.
- Pressure controller with external pressure cell and timer switch.

Article	Art. No.
CENTRO-P	0157.0397
CENTRO-PE	0157.0398
CENTRO-PT	0157.0399
CENTRO-PTE	0157.0400

! Common features	
Degree of protection (IP)	54
Housing material	Synthetic material
Colour	Light grey
Max. ambient temperature	40 °C
Width / Height / Depth	220 mm x 190 mm x 110 mm

Pressure tubing  
 Centro



- Can be used with Maico Centro-ER system for centralised ventilation.
- Underpressure hose for connecting the measuring lance to the pressure cell.
- Easy plug-in connection without clips.

! Common features	
Material	Synthetic material
Colour	Blue
Max. ambient temperature	40 °C
External diameter	8 mm
Length	5,000 mm

Article	Art. No.
CENTRO-PP	0092.0487

Centrifugal roof fan  
 ERD



**Features**

- Attractive housing made of galvanised sheet-steel.
- Housing easily detachable for cleaning purposes.
- Galvanized protective grille on the discharge side, protection against accidental contact in accordance with DIN EN 294.
- Sturdy eyebolts enable transport by crane.

- Impeller with blades curved to the rear, dynamically balanced at two levels, in accordance with performance level 6.3, DIN ISO 1940.
- Impeller made of glass-fibre filled polypropylene.

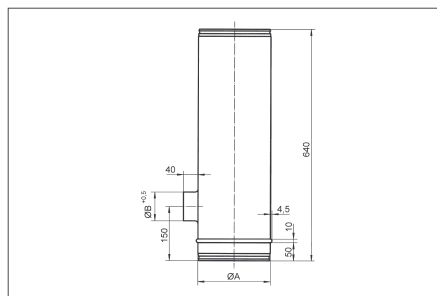
Fire protection compensation unit  
BA



Article	Art. No.	Nominal size mm	Number of couplings
BA 100-0	0093.1019	100	0
BA 125-0	0093.1020	125	0
BA 160-0	0093.1021	160	0
BA 200-0	0093.1022	200	0
BA 100/80-1	0093.1000	100	1
BA 125/80-1	0093.1001	125	1
BA 160/80-1	0093.1002	160	1
BA 200/80-1	0093.1003	200	1
BA 100/80-2	0093.1004	100	2
BA 125/80-2	0093.1005	125	2
BA 160/80-2	0093.1006	160	2
BA 200/80-2	0093.1007	200	2
BA 125/100-1	0093.1008	125	1
BA 160/100-1	0093.1009	160	1

- Can only be used in combination with the aeroduct fire protection system.
- Fire protection compensation unit: simultaneously T-piece and compensator, which provides fire protection without the need for additional assembly
- In case of fire the fire protection compensation element guarantees that no significant force will be exerted on the ventilation duct.
- BA fire protection compensation element without connection couplings, for use when bridging floors where no fans have to be connected, or when re-routing the main duct.
- Continuous cross section of the main duct for easy duct cleaning.
- General official approval, approval number Z-41.6-573 (approval only in conjunction with MAICO fans).
- Selectable with 0, 1 or 2 connection couplings.
- Fire resistance class K90-18017 S.

Dimensions [mm]



! Common features

Material	Sheet steel
Air direction	Air extraction

Article	A	B
BA 100-0	100	-
BA 125-0	125	-
BA 160-0	160	-
BA 200-0	200	-
BA 100/80-1	100	81
BA 125/80-1	125	81
BA 160/80-1	160	81
BA 200/80-1	200	81
BA 100/80-2	100	81
BA 125/80-2	125	81
BA 160/80-2	160	81
BA 200/80-2	200	81
BA 125/100-1	125	101
BA 160/100-1	160	101

Fire protection insulation  
BI



Article	Art. No.	Nominal size mm	Packing unit
BI 100	0092.0395	100	3 x 1 m piece
BI 125	0092.0396	125	3 x 1 m piece
BI 160	0092.0397	160	1 x 1 m piece
BI 200	0092.0398	200	1 x 1 m piece

- Must be combined with the aeroduct fire protection system.
- With tubular sound absorbers made from rock wool, covered with non-tearing aluminium foil.
- Non-combustible in accordance with DIN 4102 class A2 (building material classification).
- Length: 1 m.
- Duct shell thickness: 40 mm.
- No cancer causing agents, in accordance with EC directive 97/69/EG and Dangerous Materials Ordinance Appendix V, No. 7.1(1).
- Safe processing through high biological capabilities.
- Water-proofed, water absorption < 10 % volume.
- Only complete packing units will be delivered.

! Common features

Material	Rock wool
----------	-----------

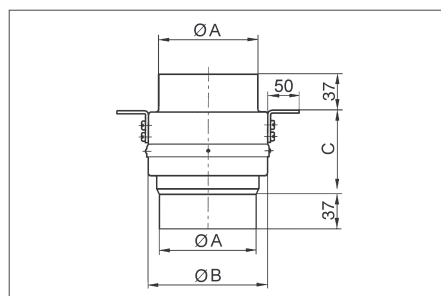


Fire protection ceiling barrier  
 TS 18



- Fire protection ceiling barrier for ER exhaust air systems.
- With continuous open cross-section and smooth inner surfaces.
- General official approval, approval number Z-41.3-556.
- Certificate of approval on request.
- Fire resistance class K90-18017.
- Maintenance-free.

Dimensions [mm]



Article	Art. No.	Nominal size mm
TS 18 DN 100	0151.0320	100
TS 18 DN 125	0151.0321	125
TS 18 DN 140	0151.0322	140
TS 18 DN 160	0151.0323	160
TS 18 DN 180	0151.0324	180
TS 18 DN 200	0151.0325	200

! Common features

Material	Sheet steel
Air direction	Ventilation / Air extraction

Article	A	B	C
TS 18 DN 100	99	126	78
TS 18 DN 125	124	156	88
TS 18 DN 140	139	173	93
TS 18 DN 160	159	195	106
TS 18 DN 180	179	220	116
TS 18 DN 200	199	242	128

Flexible steel duct  
 SFR



- Flexible single-grooved folded spiral-seams duct made of galvanised sheet-steel to be used as connection to the main duct, in accordance with DIN 18017-3.
- Application of flexible steel ducts when using the aeroduct fire protection systems, in accordance with the general official approval Z-41.6-573.
- Non-combustible in accordance with DIN 4102 class A1 (building material classification).
- Length details: Extended length.

Article	Art. No.
SFR 80	0055.0072

! Common features

Nominal size	80 mm
Material	Sheet steel
Length	1,200 mm

Flexible aluminium duct  
 AFR



- Flexible single-grooved folded spiral-seams aluminium duct to be used as connecting duct to the main duct, in accordance with DIN 18017-3.
- Non-combustible in accordance with DIN 4102 class A1 (building material classification).
- Maximum operating pressure: 2500 Pa.
- Length details: Extended length.

Article	Art. No.	Nominal size mm	Length mm
AFR 75	0055.0088	75	3,000
AFR 80	0055.0092	80	3,000
AFR 100	0055.0090	100	10,000
AFR 125	0055.0091	125	10,000
AFR 150	0055.0093	150	10,000

! Common features

Material	Aluminium
Max. ambient temperature	100 °C

Roof cowl  
DF, DP, BS, RG

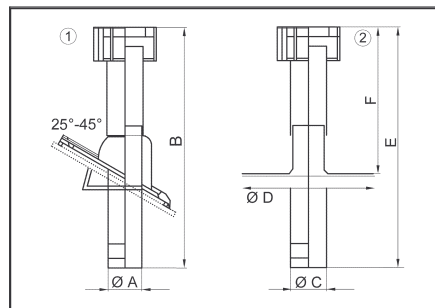


Article	Art. No.
DF 125 T	0092.0373
DF 125 S	0092.0374
DF 160 S	0092.0375
DP 125 TF	0092.0376
DP 125 SF	0092.0377
DP 125 TB	0092.0378
DP 125 SB	0092.0379
DP 160 SB	0092.0380
DP 125 A	0092.0382
DP 160 A	0092.0383
BS 125	0092.0359
BS 160	0092.0360
DF 125 T	0092.0373
DF 125 S	0092.0374
DF 160 S	0092.0375

- For the routing of supply air or exhaust air from fans or air extraction systems.
- Material: Outlet made of polypropylene. Roofing tiles made of polyethylene or lead. Flat roof installation made of aluminium.
- Suitable for flat roofs or 25° to 45° pitched roofs.
- No static pressure loss.
- With condensation drainage.
- Reducers must be provided by the customer.
- We recommend using BS type mounting clamps for wind pressure resistant roof mounting.

- Proceed as follows to find the suitable combination of roofing tile, roof outlet and mounting clamp etc. for your application:
  - Select the line from the "Requirements" column that best describes your requirements for type of tile and pitch of roof, colour of tile and roof outlet, from the following table.
  - You will find the system configuration that best matches your requirements on the right-hand side of the table. Details concerning products (colour, article no.) and the dimensions are shown later.

Dimensions [mm]



- ① For pitched roofs
- ② For flat roofs

System no.	A	B	C	D	E	F
1 - 4	125	815	-	-	-	-
5 - 6	-	-	125	535	815	465
7	160	1135	-	-	-	-
8	-	-	160	490	1135	620

Requirement				Suitable system configuration				
Connection	Type of tile	Colour of tile	Colour of roof outlet	Roofing tile	Roof outlet	Mounting clamp	Rain grille	System no.
125	Double Roman tile	Terracotta	Terracotta	DP 125 TF	DF 125 T	BS125	RG125	1
125	Double Roman tile	Black	Black	DP 125 SF	DF 125 S	BS 125	RG 125	2
125	Universal lead tile	Terracotta / Lead	Terracotta	DP 125 TB	DF 125 T	BS 125	RG 125	3
125	Universal lead tile	Black / Lead	Black	DP 125 SB	DF 125 S	BS 125	RG 125	4
125	Aluminium flange / flat roof	Aluminium	Black	DP 125 A	DF 125 S	BS 125	RG 125	5
125	Aluminium flange / flat roof	Aluminium	Terracotta	DP 125 A	DF 125 T	BS 125	RG 125	6
160	Universal lead tile	Black / Lead	Black	DP 160 SB	DF 160 S	BS 160	RG 160	7
160	Aluminium flange / flat roof	Aluminium	Black	DP 160 A	DF 160 S	BS 160	RG 160	8

Second room extraction system  
ER-ZR



Article	Art. No.
ER-ZR	0093.1025

- Second room connection kit with mounting couplings, internal grille and filter.
- Must be combined with ER 100, ER 100 VZ, ER 100 VZC, ER 100 G, ER 100 I or ER 100 D.

**!** Common features

Filter class	G2
Material	Synthetic material
Colour	Traffic white, similar to RAL 9016
Max. ambient temperature	60 °C
Air direction	Air extraction

## Multiple family unit air extraction Accessory



### Door ventilation grille MLK



- Door ventilation grille for bathroom, WC or kitchen
- Free cross section in accordance with FeuVo 80 (German Heating Directives) and TRGI 86 (German Directives for Gas Installation).
- Door leaf thickness: at least 30 mm
- MLK 30: Door cut-out: 275 x 105 mm, external dimension: 295 x 120 mm.
- MLK 45: Door cut-out: 436 x 76 mm, external dimension: 457 x 92 mm.

Article	Art. No.	Colour
MLK 30 white	0151.0123	White
MLK 30 brown	0151.0124	Brown
MLK 45 white	0151.0126	White
MLK 45 brown	0151.0127	Brown

### ! Common features

Material	Synthetic material
Synthetic material definition	PVC-free polystyrene
Open cross section	154 cm <sup>2</sup>
Air direction	Ventilation/ Air extraction

### Mounting support UPM



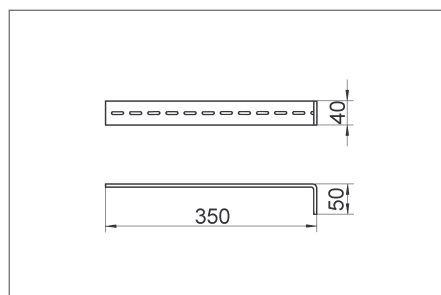
- Mounting support for installation of ER-UP fans to walls, ceilings or in shafts.
- With slots for precise adjustment of the fan housing.
- Packing unit: 2 L-shaped angle plates, 4 mounting screws.

Article	Art. No.
UPM 60/100	0018.0010

### ! Common features

Material	Sheet steel
----------	-------------

### Dimensions [mm]



### Masking frame ER-AR



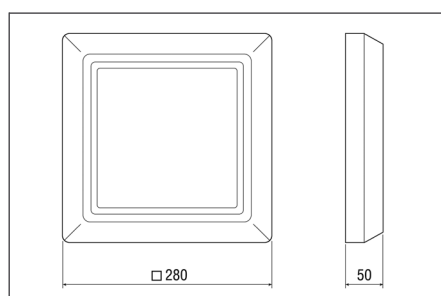
- Masking frame for all ER-UP... housings.
- Covers joints between the recessed housing and the wall tiles.
- Prevents unattractive gaps around the recessed housing.
- Scope of delivery: Masking frame, fixing screw

Article	Art. No.
ER-AP	0059.0899

### ! Common features

Material	Synthetic material
Colour	Traffic white, similar to RAL 9016

### Dimensions [mm]





Spacing frame  
DR



Article	Art. No.
DR 60/100	0059.0928

- Spacing frame for housings that have been plastered too deep.
- Maximum depth: 20 mm.
- Fit a spacing frame between the wall and the internal cover.

! Common features

Material	Synthetic material
Colour	Traffic white, similar to RAL 9016

Wall frame  
ER-MR



Article	Art. No.
ER-MR	0018.0024

- Wall frames for housings that have been plastered too deep, to prevent the air from being drawn out of the shaft.
- Can be combined with all ER-UP... housings.
- Consists of 2 plate frames that can be slid inside each other.
- Adjustable depth: 50 mm to 100 mm.
- With 100 mm long screw.

! Common features

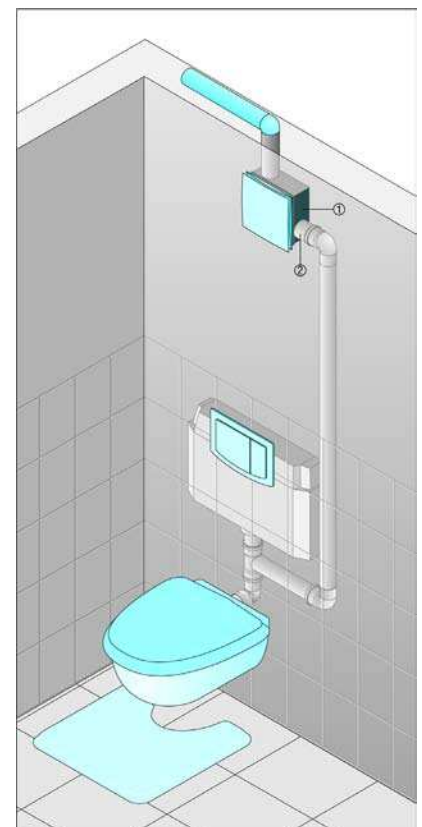
Material	Sheet steel
----------	-------------

Air extraction socket  
ER-AS



Article	Art. No.
ER-AS	0093.0928

- Air extraction sockets for MAICO ER-UPD and ER-UP/G for toilet seat ventilation. Simultaneous ventilation of the room and extraction at the toilet seat.
- Pre-requirement: The flushing pipe from the recessed-mounted toilet cistern is fitted with a DN 70 branch.
- Connection from flushing pipe to the HT DN 70 fan, resulting in reduced air speeds and effective, draught-free extraction.
- Combination with ER 60 or ER 100.
- Cistern recommendation: Manufacturer TECE, TECEprofil Universal module for WC with TECE cistern with connection for odour extraction. TECE Order no.: 9.300.003, www.tece.de, Tel.: 0 25 72 / 928-0.



! Common features

Material	Synthetic material
Colour	Black
Max. ambient temperature	60 °C
Air direction	Air extraction

## Multiple family unit air extraction

# Accessory



### Sponge rubber set ER-MO



- Sponge rubber set for the sound insulation of ER-UP/G and ER-UPD recessed housings, when used with highly resonant thin roofs or walls.
- Length is enough for 2 housings.

#### ! Common features

Material	Synthetic material
Length	2,200 mm

Article	Art. No.
ER-MO	0092.0361

### Air filter, replacement ZF



- Replacement air filter for ER and ER-AP/APB.

#### ! Common features

Filter class	G2
Max. ambient temperature	40 °C

Article	Art. No.	Packing unit
ZF 60/100	0093.0680	5 pieces
ZF 60/100 bulk container	0093.0885	100 pieces

### Air filter, replacement ZRF



- Replacement filter for ER-ZR second room connection kit and for AZE 100 and ESG 10/2 internal grilles.

#### ! Common features

Nominal size	100 mm
Packing unit	5 pieces

Article	Art. No.
ZRF	0093.0923

Radio switch  
XS



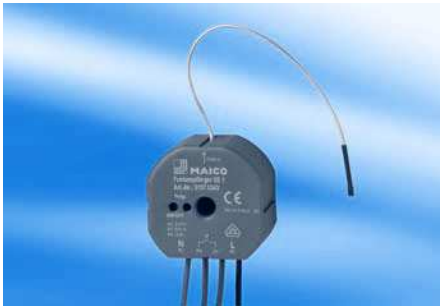
Article	Art. No.
XS1	0157.0344

- Radio system for location-independent switching of AC fans or other consumers, such as light, circulation pump, etc.
- For renovations and retrofit installations. No painting or wallpapering.
- Tiles don't need to be removed or renewed.
- Application wherever no control cable can be installed.
- Radio switch can be used on the move.
- Radio switch can also be screwed down or stuck onto a glass surface.
- Simple sender set-up saves on time-consuming programming.
- Batteries included in scope of delivery.
- Radio system consists of XS 1 radio switch and XE 1 radio receiver.

! Common features

U <sub>nom</sub>	2 x 3 V
Radio frequency	433 MHz
Colour	Pure white, similar to RAL 9010
Type of installation	Surface-mounted
Width / Height / Depth	88 mm x 88 mm x 32 mm

Radio receiver  
XE



Article	Art. No.
XE1	0157.0343

- Radio receiver for a wireless connection from the switch to the fan.
- Installation in standard recessed-mounting box or distribution box.
- Radio system consists of XS 1 radio switch and XE 1 radio receiver.

! Common features

U <sub>nom</sub>	230 V
Degree of protection (IP)	20
Maximum load (inductive load)	2 A
Maximum load (ohmic load)	4 A
Radio frequency	433 MHz
Colour	Blue
Max. ambient temperature	55 °C
Type of installation	Recessed-mounted
Width / Height / Depth	52 mm x 52 mm x 21 mm

3-step switch  
DS



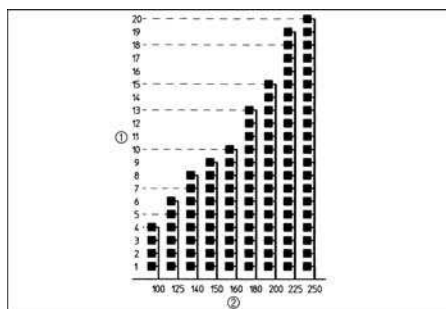
Article	Art. No.
DS 3N	0157.0186

- Rotary switch for controlling 3-step ventilators (e.g. ER 100 D exhaust air fan).
- Suitable for standard recessed-mounted boxes.
- With zero position.

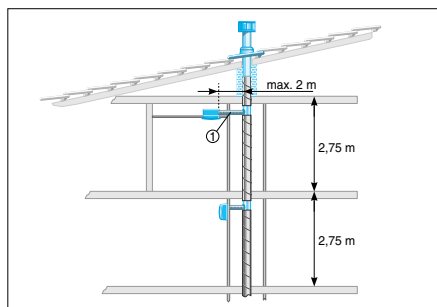
! Common features

U <sub>nom</sub>	230 V
Degree of protection (IP)	30
Maximum load	16 A
Colour	Polar white
Type of installation	Recessed-mounted
Width / Height / Depth	80 mm x 80 mm x 32 mm

## ER 60, one unit per complete floor

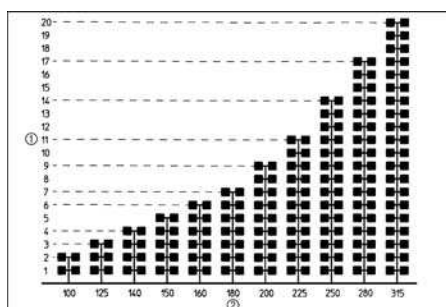


① Number of floors ② Main duct diameter in mm

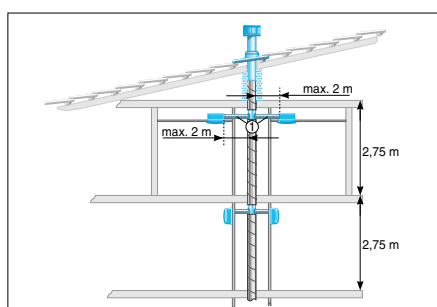


① a maximum of 2 elbows

## ER 60, two units per complete floor

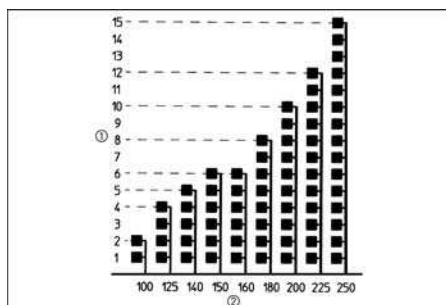


① Number of floors ② Main duct diameter in mm

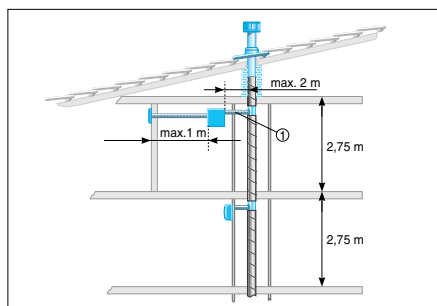


① a maximum of 2 elbows

## ER 100, one unit per complete floor

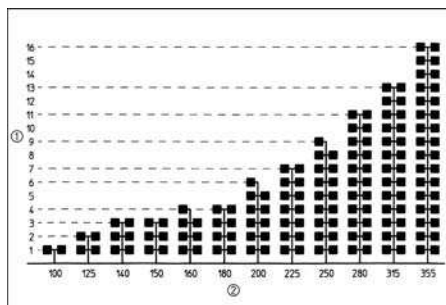


① Number of floors ② Main duct diameter in mm

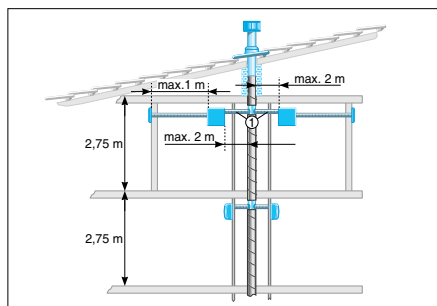


① a maximum of 2 elbows

## ER 100, two units per complete floor



① Number of floors ② Main duct diameter in mm



① a maximum of 2 elbows

### Layout example:

#### Assumption:

- Fans with 60 m<sup>3</sup>/h in the connecting duct.
- 2 fans per complete floor
- Building with 11 floors.

#### Procedure:

- The illustration shows 2 fans per floor each with 60 m<sup>3</sup>/h - see Y-axis "11 floors" - the associated main duct must have a diameter of 225 mm.

## Protection areas in bathrooms in accordance with DIN VDE 0100-701

- Bathrooms are divided into in 4 sectors, in which different requirements are valid for the degree of protection for the electrical equipment.
- If water jets occur in sector 1, select IP X5 degree of protection.
- All MAICO ER units have the IP X5 degree of protection.

