mercor®

FIRE VENTILATION SYSTEMS

FIRE DAMPERS AND FIRE VALVES

BIM CAD

downloadable models
on the website
under the designer zone tab

CE
1812-CPR-1916
1812-CPR-1917
1812-CPR-1918
1812-CPR-1919

Efectis

HYGIENIC CERTIFICATE

» **EIS120**
» Fire resistance class: EI120 (v_e h_o i↔o)S, EI60 (v_e h_o i↔o)S.
» Certificate of constancy of performance 1812-CPR-1916, 1812-CPR-1917, 1812-CPR-1918, 1812-CPR-1919.
» Dampers certified for compliance with EN 15650.
» Dampers qualified under EN 13501-3 and tested under EN 1366-2.
» Cut-off dampers resistance independent of airflow direction and installation side.
» Certified installation in ductwork or with anemostat at system termination.
» Certified installation with both horizontal and vertical axis of rotation.

6.1| Application

mcr FID WING cut-off dampers are designed for installation in general ventilation systems at installation passages through vertical and horizontal construction partitions. During a fire, they preserve the fire resistance rating of the construction partition that the ventilation and air conditioning ducts are routed through. Furthermore, they prevent the spreading of fire, smoke and fire gasses to the remaining part of the building which is not on fire. During normal system operation, the damper blade is open. In case of fire, the damper blade closes.
The dampers cannot be operated in systems exposed to dust, unless included in a special, individually developed service and technical inspections programme.

6.2| Design

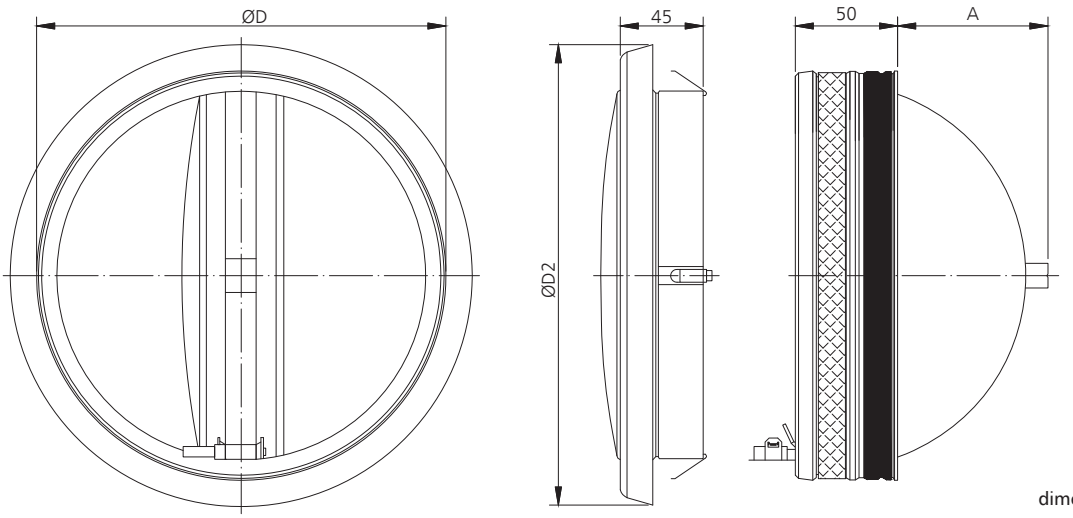
mcr FID WING cut-off fire dampers consist of a casing with a circular cross-section, a moving damper blade and a trigger and control mechanism, which is activated when the thermal trigger is tripped. The damper casing is made of galvanized steel sheets. There is an intumescent gasket and ventilation gasket on its outer part. The damper blade is made of a fireproof material.
mcr FID WING fire dampers remain open during normal operation. Dampers are switched over into safety state (closed) automatically when the thermal trigger (RST-type actuation and control mechanism) trips.
Fire dampers may be equipped with an adjustable air anemostat, the performance (active surface area) of which is adjusted by turning its disc. Anemostats are supplied in RAL 9010.

6.3 | Versions

During normal operation, the fire damper blade remains open. In case of fire, the blade closes automatically. mcr FID WING fire dampers are equipped with an RST trigger and control mechanism with a 74°C thermal trigger and driving spring. Once the nominal temperature is exceeded, the thermal trigger is tripped and the blade closes. It is possible to equip the valves with a WK1 limit switch used to signal the blade position.

6.4 | Dimensions

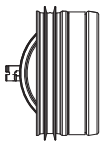
» circular dampers:



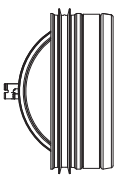
dimensions in [mm]

nominal diameter ØD [mm]	anemostat external diameter ØD2 [mm]	length A [mm]	weight [kg]
100	149	21	0,2
125	169	34	0,3
160	195	51	0,4
200	240	72	0,6

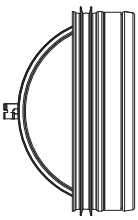
» mcr FID WING Ø100



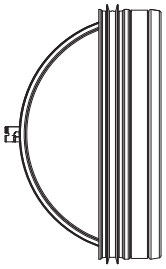
» mcr FID WING Ø125



» mcr FID WING Ø160



» mcr FID WING Ø200



6.5 | Installation

mcr FID WING circular dampers are rated EI 120 (v_e h_o i↔o) S and EI 60 (v_e h_o i↔o) S if installed in concrete, solid brickwork or aerated concrete blockwork partitions with min. thickness of 100 mm, in light walls made of gypsum boards on a steel framework with a min. thickness of 100 mm and a fire resistance rating equal to the expected fire resistance rating of the fire damper in question and in concrete floor slabs with a min. thickness of 100 mm for EIS60 and 150 mm for EIS120.

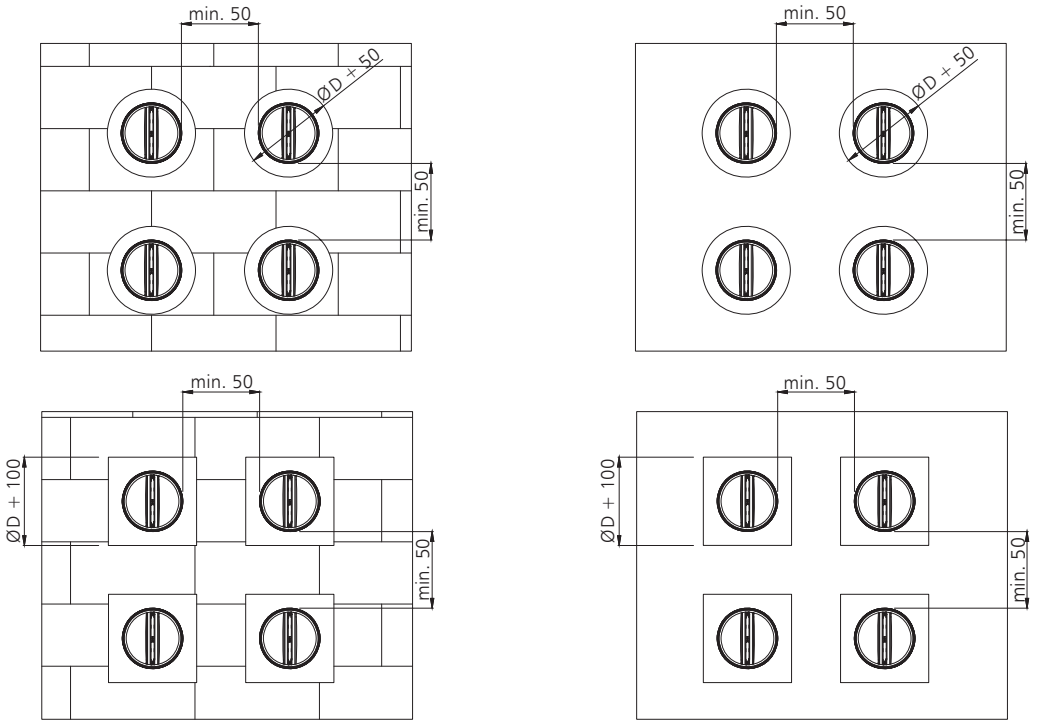
6.5.1 | Preparation of installation openings

» walls - preferred opening

» floor slabs - preferred opening

» wet installation

» dry installation

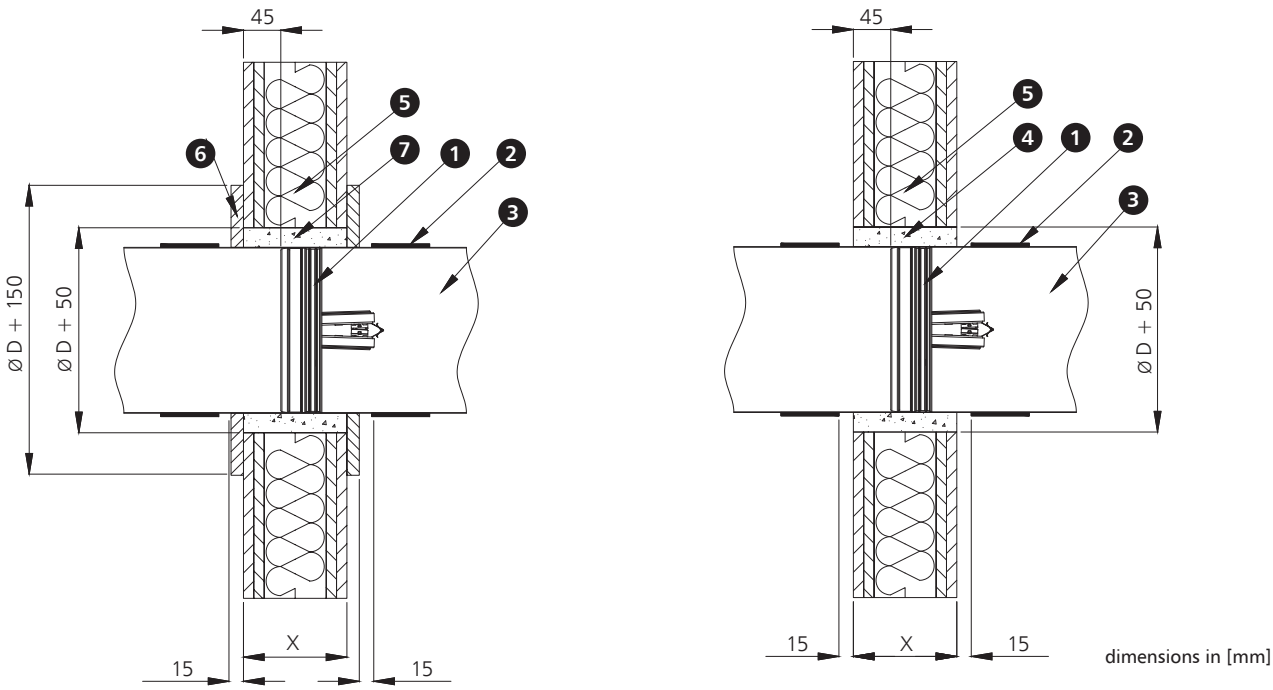


dimensions in [mm]

6.5.2 | mcr FID WING damper installation in plasterboard walls for EI60

» opening □

» opening ○



dimensions in [mm]

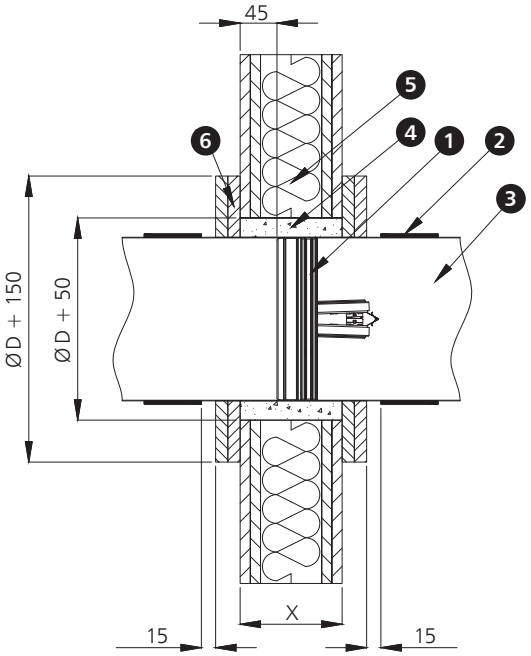
1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. assembly mortar*
5. plasterboard wall
6. gypsum board trim 12.5 mm
7. assembly mortar or mineral wool *

X wall thickness

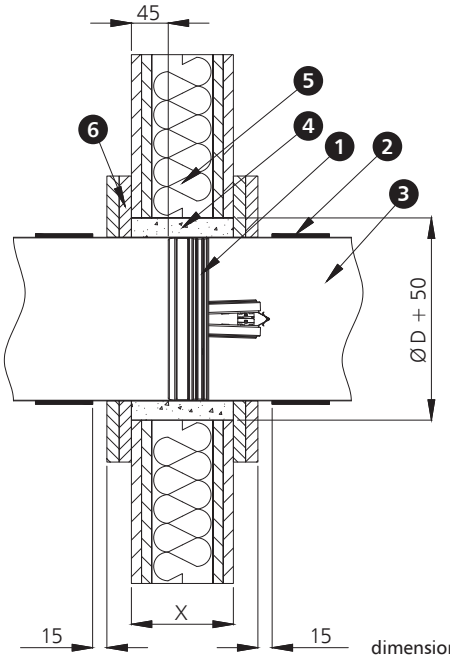
* Recommended installation of the damper in a dry system is based on wool of min. 40 kg / m3 with A1 nonflammability class. The recommended installation of the damper in a wet system is based on a plaster or cementbased mortar. The manufacturer allows the use of other materials with parameters that confirm and ensure the appropriate class of fire resistance for the applied method of assembly.

6.5.3 | mcr FID WING damper installation in plasterboard walls for EI60

» opening □



» opening ○



dimensions in [mm]

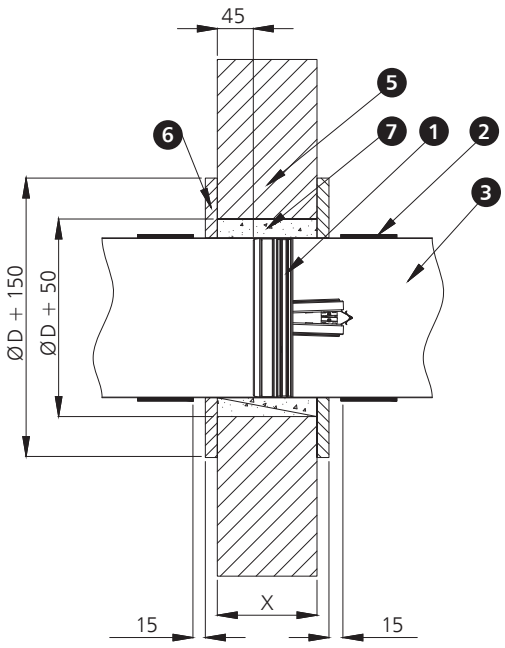
1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. assembly mortar*
5. plasterboard wall
6. gypsum board trim 12.5 mm

X wall thickness

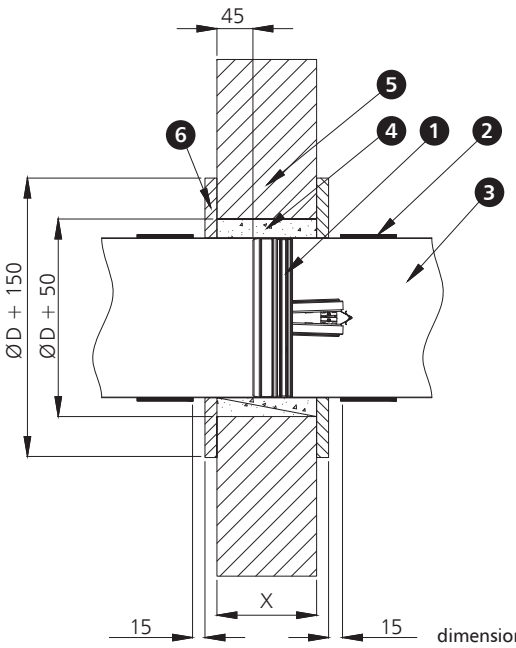
* Recommended installation of the damper in a dry system is based on wool of min. 100 kg / m³ with A1 nonflammability class. The recommended installation of the damper in a wet system is based on a plaster or cementbased mortar. The manufacturer allows the use of other materials with parameters that confirm and ensure the appropriate class of fire resistance for the applied method of assembly.

6.5.4 | mcr FID WING damper installation in rigid walls for EI60

» opening □



» opening ○



dimensions in [mm]

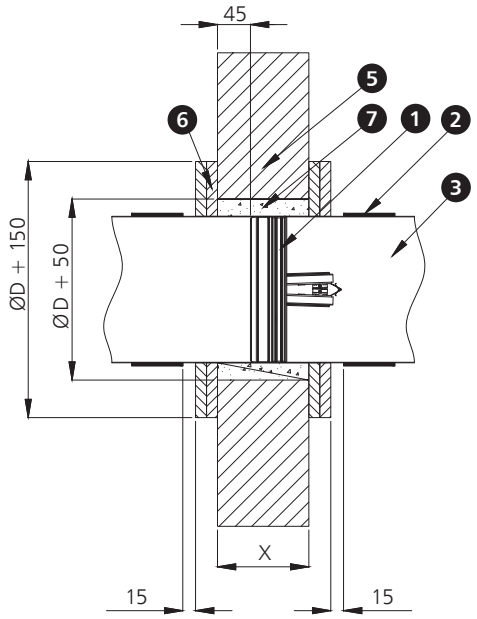
1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. .assembly mortar*
5. rigid wall
6. gypsum board trim 12.5 mm
7. assembly mortar or mineral wool*

X wall thickness

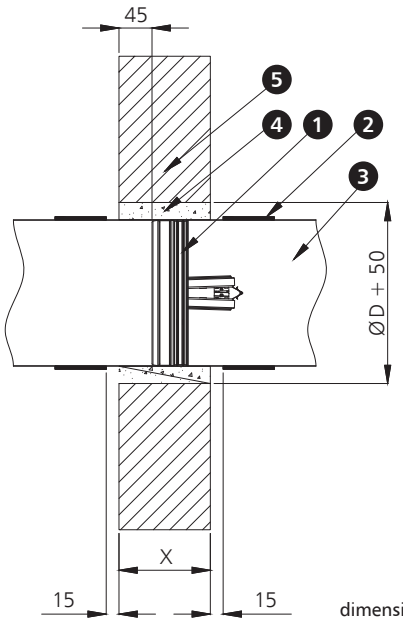
* Recommended installation of the damper in a dry system is based on wool of min. 100 kg / m³ with A1 nonflammability class. The recommended installation of the damper in a wet system is based on a plaster or cementbased mortar. The manufacturer allows the use of other materials with parameters that confirm and ensure the appropriate class of fire resistance for the applied method of assembly.

6.5.5 | mcr FID WING damper installation in rigid walls for EIS120

» opening □



» opening ○



dimensions in [mm]

1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. assembly mortar*
5. rigid wall
6. gypsum board trim 12.5 mm
7. assembly mortar or mineral wool* X wall thicknes*

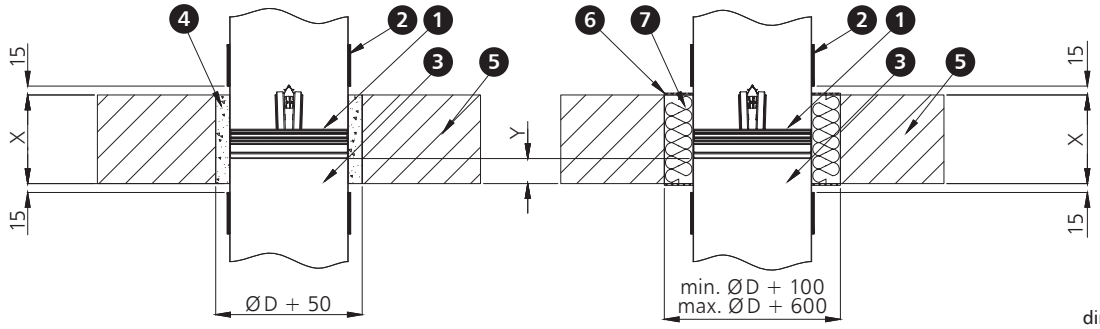
X wall thickness

* Recommended installation of the damper in a dry system is based on wool of min. 100 kg / m³ with A1 nonflammability class. The recommended installation of the damper in a wet system is based on a plaster or cementbased mortar. The manufacturer allows the use of other materials with parameters that confirm and ensure the appropriate class of fire resistance for the applied method of assembly.

6.5.6 | mcr FID WING damper installation in floor slabs

» opening □

» opening ○



dimensions in [mm]

1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. assembly mortar*
5. floor slab
6. elastic fire protection grout/mass*
7. .mineral wool*

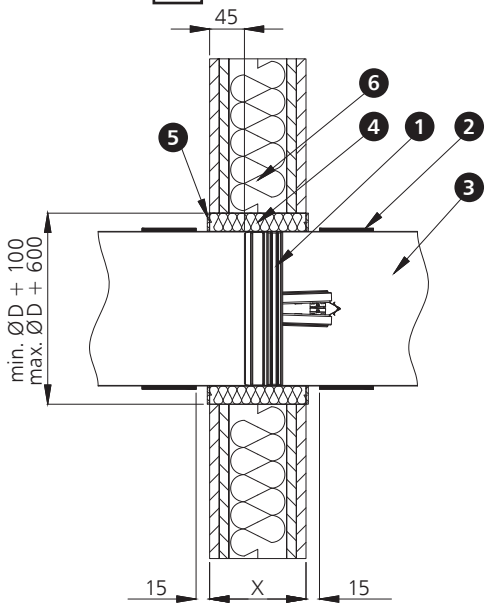
X wall thickness

Y 75 mm for EIS120, 45 mm for EIS60

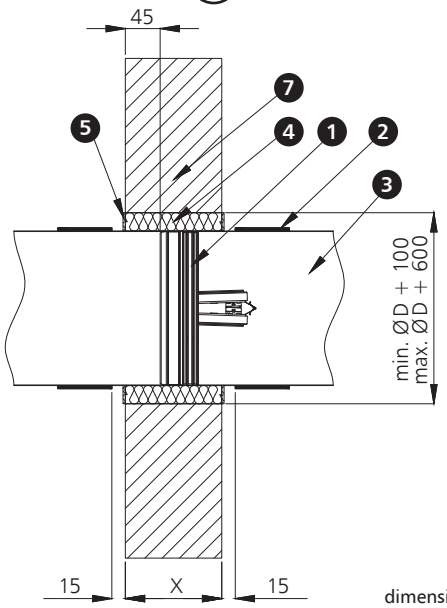
* Recommended installation of the damper in a dry system is based on wool of min. 140 kg / m³ with non-flammability class A1, thickness min. 50mm and securing the joint between the wool and the wall with PROMASTOP E PASTE or HILTI CFS-CT paint and wool with the fire-retardant PROMASTOP E PASTE or HILTI CFS-S ACR paint, as shown in the above drawing. The recommended installation of the damper in a wet system is based on plaster or cement mortar. The manufacturer allows the use of other materials with parameters that confirm and ensure the appropriate class of fire resistance for the applied method of assembly.

6.5.7 | mcr FID WING damper installation in dry systems

» opening □



» opening ○



dimensions in [mm]

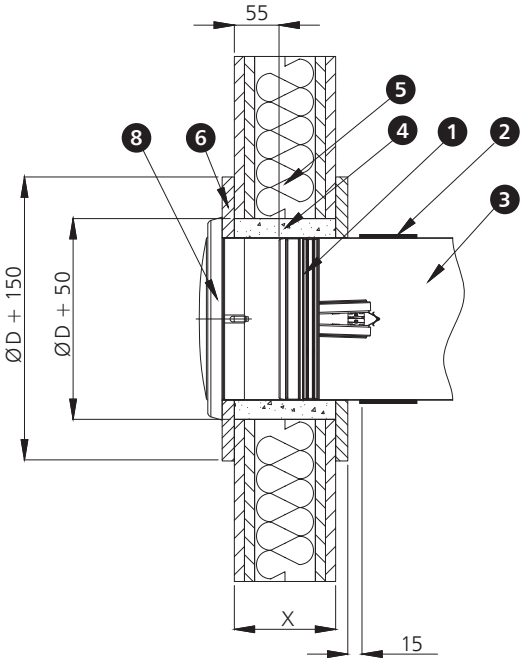
1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. mineral wool*
5. elastic fire protection grout/mass*
6. plasterboard wall
7. rigid wall

X wall thickness

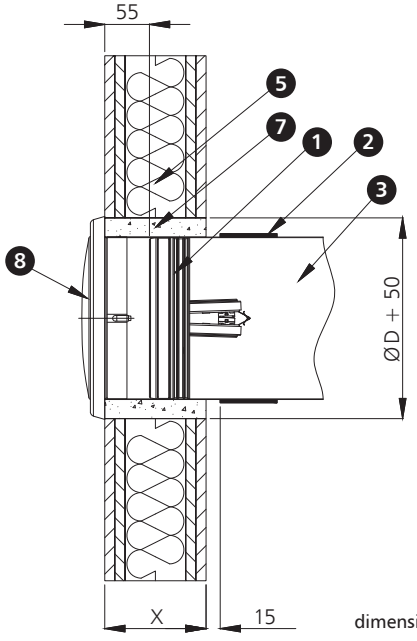
* Recommended damper installation in a dry system is based on wool with a min. density of 140 kg/m3 and fire resistance class A1 and a thickness of at least 50 mm, as well as on securing the contact portion between the wool and the wall with PROMASTOP E PASTE or HILTI CFS-CT elastic mass and wool with the PROMASTOP E PASTE or HILTI CFS-S ACR fire protection elastic mass, as per the drawing above.
The manufacturer allows for using other materials with parameters that confirm and ensure the appropriate fire resistance rating for the installation method applied.

6.5.8 | mcr FID WING damper installation in plasterboard walls for EIS60

» opening □



» opening ○



dimensions in [mm]

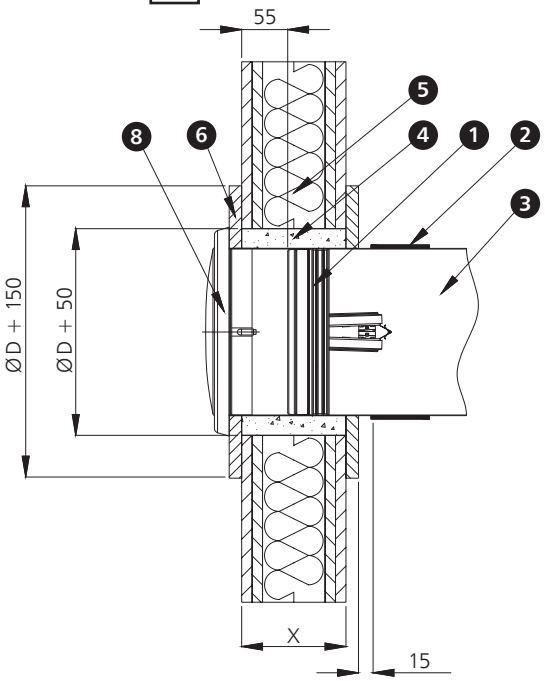
1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. assembly mortar or mineral wool*
5. plasterboard wall
6. gypsum board trim 12.5 mm
7. assembly mortar*
8. anemostat

X wall thickness

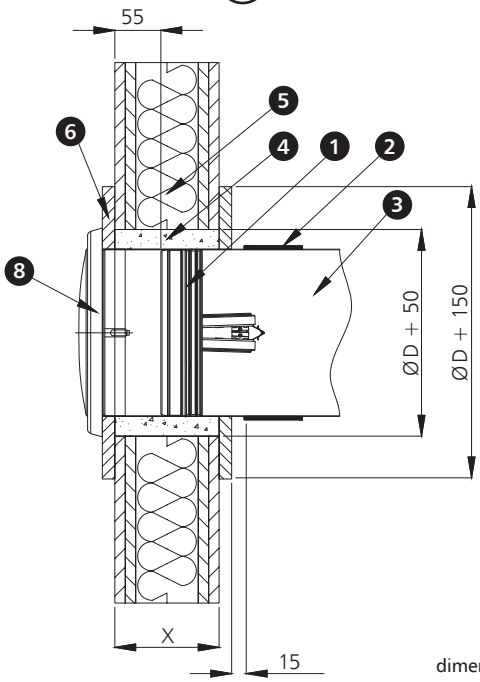
* Recommended damper installation in a wet system is based on assembly mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters that confirm and ensure the appropriate fire resistance rating for the installation method applied.

6.5.9 | mcr FID WING damper installation in plasterboard walls for EIS120

» opening □



» opening ○



dimensions in [mm]

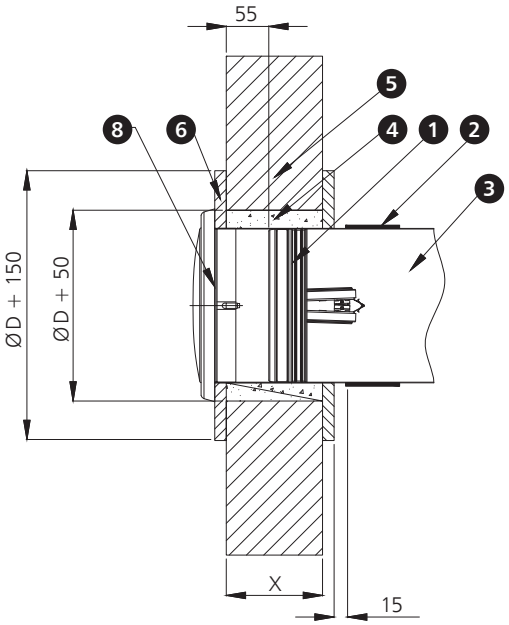
1. mcr FID WING fire damper
2. .insulating wrap
3. ventilation duct
4. assembly mortar or mineral wool*
5. .plasterboard wall
6. gypsum board trim 12.5 mm
7. anemostat

X wall thickness

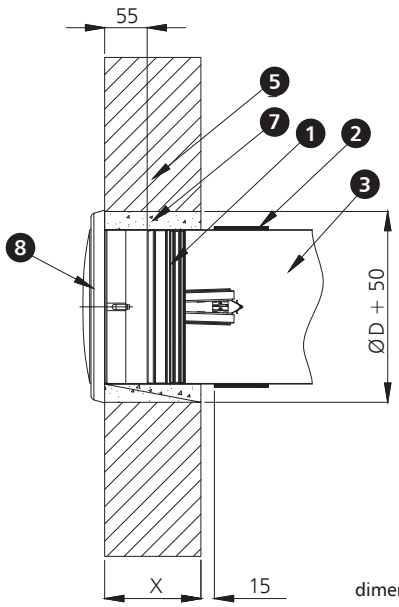
* Recommended damper installation in a dry system is based on wool with a min. density of 40 kg/m³ and fire resistance class A1, as well as on securing the contact portion of the damper. Recommended damper installation in a wet system is based on assembly mortar on the basis of gypsum or cement. The manufacturer allows for using other materials with parameters that confirm and ensure the appropriate fire resistance rating for the installation method applied.

6.5.10 | mcr FID WING damper installation in rigid walls for EIS120 and EIS60

» opening □



» opening ○



dimensions in [mm]

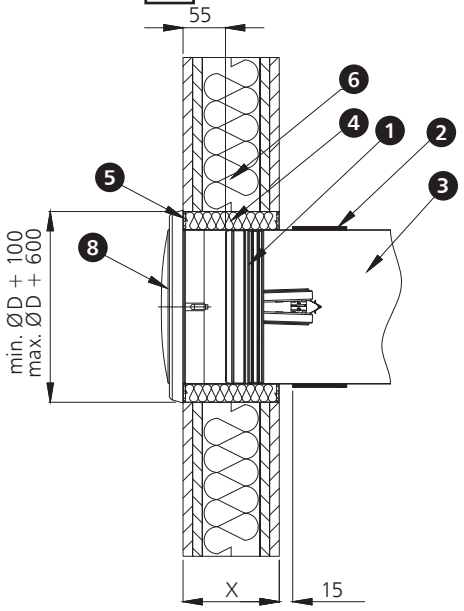
1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. assembly mortar or mineral wool*
5. rigid wall
6. gypsum board trim 12.5 mm
7. .assembly mortar*
8. anemostat

X wall thickness

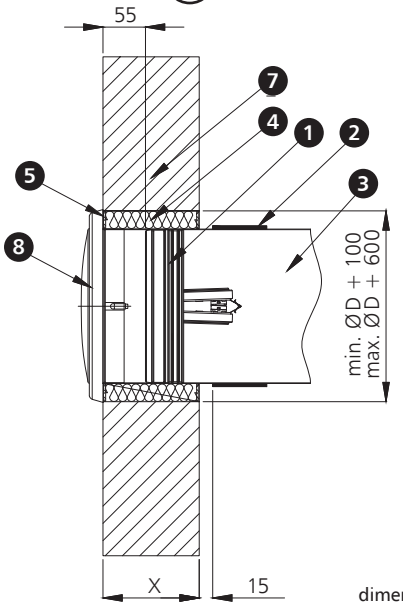
* Recommended damper installation in a dry system is based on wool with a min. density of 40 kg/m³ and fire resistance class A1, as well as on securing the contact portion of the damper. Recommended damper installation in a wet system is based on assembly mortar on the basis of gypsum or cement.

6.5.11 | mcr FID WING damper installation in dry systems

» opening □



» opening ○



dimensions in [mm]

1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. mineral wool*
5. elastic fire protection grout/mass*
6. plasterboard wall
7. rigid wall
8. anemostat

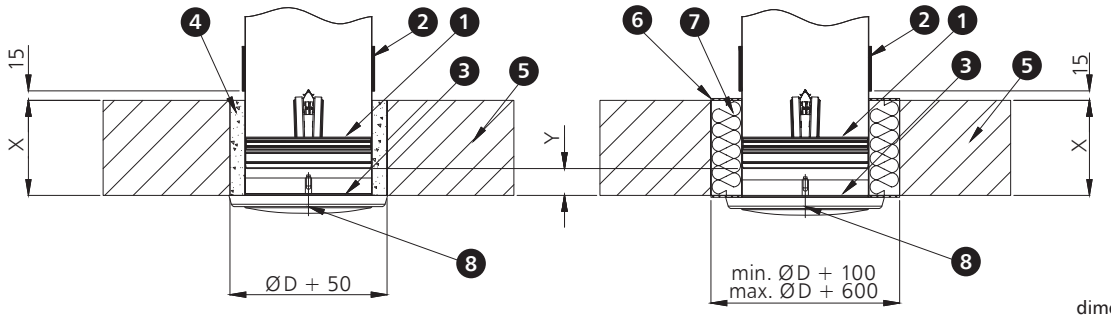
X wall thickness

* Recommended damper installation in a dry system is based on wool with a min. density of 140 kg/m³ and fire resistance class A1 and a thickness of at least 50 mm, as well as on securing the contact portion between the wool and the wall with PROMASTOP E PASTE or HILTI CFS-CT elastic mass and wool with the PROMASTOP E PASTE or HILTI CFS-S ACR fire protection elastic mass, as per the drawing above.
The manufacturer allows for using other materials with parameters that confirm and ensure the appropriate fire resistance rating for the installation method applied.

6.5.12 | mcr FID WING damper installation in floor slabs

» opening □

» opening ○



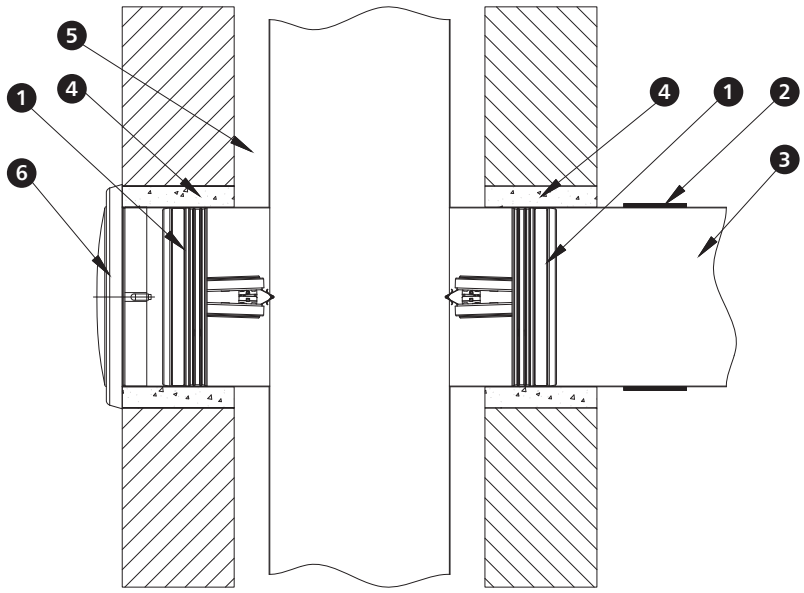
dimensions in [mm]

1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. assembly mortar*
5. floor slab
6. elastic fire protection grout/mass*
7. .mineral wool*
8. anemostat

X wall thickness
Y70 mm for EI120
55 mm for EI60

* Recommended damper installation in a dry system is based on wool with a min. density of 140 kg/m3 and fire resistance class A1 and a thickness of at least 50 mm, as well as on securing the contact portion between the wool and the wall with PROMASTOP E PASTE or HILTI CFS-CT elastic mass and wool with the PROMASTOP E PASTE or HILTI CFS-S ACR fire protection elastic mass, as per the drawing above. Recommended damper installation in a wet system is based on assembly mortar on the basis of gypsum or cement.
The manufacturer allows for using other materials with parameters that confirm and ensure the appropriate fire resistance rating for the installation method applied.

6.5.13 | mcr FID WING damper installation in service shaft openings for EIS120 and EIS60



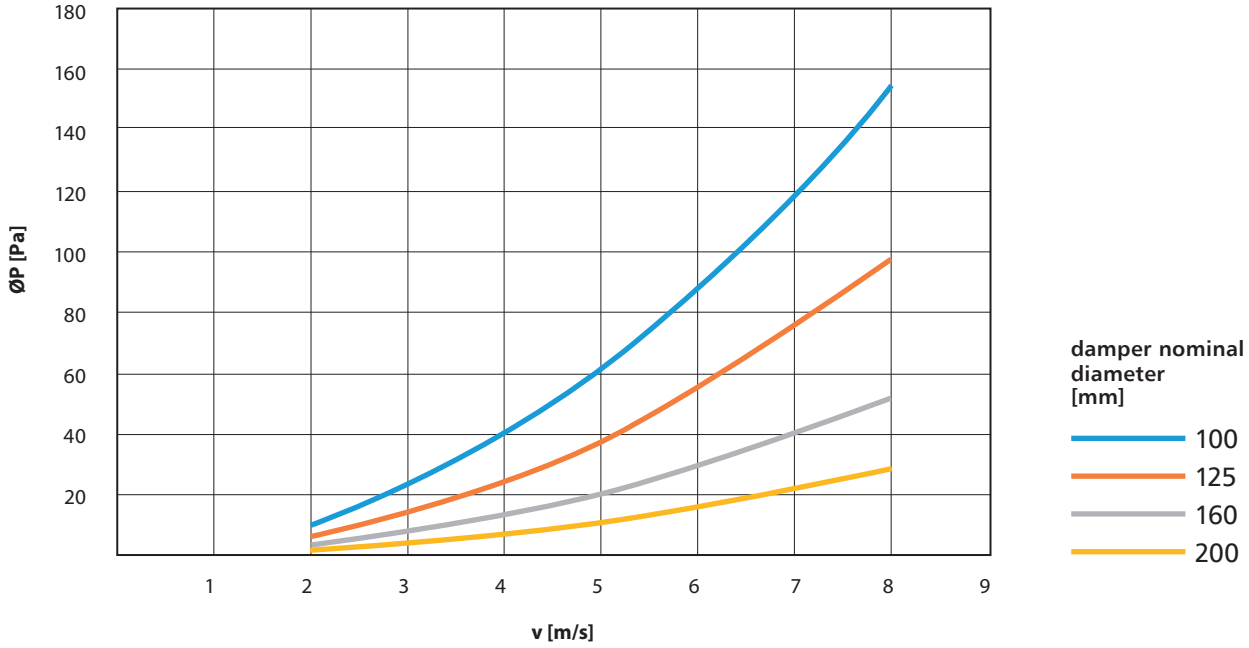
1. mcr FID WING fire damper
2. insulating wrap
3. ventilation duct
4. installation clearance filling*
5. service shaft
6. anemostat

* The method of filling the installation clearance is based on the fire resistance rating of the solution and the assembly method as shown in the drawings above. When the damper is installed in the service shaft openings (in technical shafts that are not designed for continuous presence or stay of people), it is not necessary to use the insulating wrap supplied with the damper. The fire damper should be placed at the duct side inside the shaft. Fire resistance rating of the shaft walls should be equal to or higher than that of the fire damper.

6.6 | mcr FID WING circular dampers technical parameters

product	D [mm²]	S_k [m²]	S_e [m²]	v [m/s]	Q [m³/h]	d_p [PA]	L_{WA} [dB]
mcr FID WING	100	0.008	0.002	2	58	11	27
				4	29	40	44
				6	43	88	54
				8	58	154	61
	125	0.012	0.004	2	29	6	24
				4	58	25	40
				6	86	55	49
				8	115	98	55
	160	0.02	0.01	2	72	3	17
				4	144	13	34
				6	216	30	44
				8	288	53	52
	200	0.031	0.017	2	122	2	16
				4	245	7	32
				6	367	16	41
				8	490	29	48

» pressure drop – mcr FID WING damper



6.7 | mcr FID WING circular fire dampers estimated weights

nominal diameter ØD [mm]	weight [kg]
100	0.3
125	0.4
160	0.5
200	0.9

6.8 | Accessories

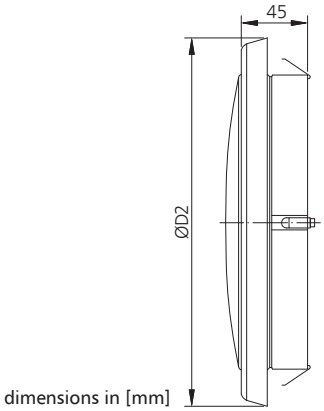
» anemostat

System AN anemostats are designed to fulfill either supply or exhaust function. They are made of plastic. They allow for an aesthetic system termination. They are equipped with a movable disc, allowing adjustment of the airflow supplied by the system. The body of the anemostat is attached to the ventilation duct with the connection collar supplied in the kit. The anemostat is fixed in the connection collar using strutting elements on the anemostat's perimeter. Such a solution allows for installing the product even in the most visually-demanding applications. Anemostats are supplied in RAL 9010 as a standard.

Marking

AN / ∅D

- nominal diameter
- anemostat type



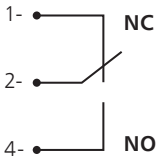
dimensions in [mm]

nominal diameter ØD [mm]	external diameter ØD2 [mm]
100	149
125	169
160	195
200	240

Trigger control mechanisms – specifications and connections diagram

execution type	RST	RST + WK1
thermal trigger	+	+
limit switch	–	250 V AC / 6A

Electrical connections diagram for the mcr FID WING +WK1 damper



1 – black
2 – grey
4 - blue 1 mA
4 V AC min. 6 A
250 V AC max.

6.9 | Marking

mcr FID WING / DIA 200 / WK1 / EIS 120

- fire resistance rating
- additional parameters
- diameter
- damper type

additional parameters

WK1 – limit switch – closed damper blade signal
AN – anemostat

NOTE: **separate additional parameters entered with the "/" sign**

example marking:

mcr FID WING / DIA 200 / AN / EIS120
EIS120 cut-off damper with a 74°C thermal trigger, equipped with a anemostat.

Chapter 18 in Technical Catalogue - power supply and control (p. 350) contains the following information:
- technical specifications and connection diagrams **for the trigger control mechanisms supporting the damper.**

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