

# CU4

Rectangular fire damper 240'



CE  
0749






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## Explanation of the abbreviations and pictograms

Wn = nominal width	E.TELE = power supply magnet	Sn = free air passage
Hn = nominal height	E.ALIM = power supply motor	$\zeta$ [-] = pressure loss coefficient
Dn = nominal diameter	V = volt	Q = air flow
E = integrity	W = watt	$\Delta P$ = static pressure drop
I = thermal insulation	Auto = automatic	v = air speed in the duct
S = smoke leakage	Tele = remote controlled	Lwa = A-weighted sound power level
Pa = pascal	Pnom = nominal capacity	Lw oct = sound power level per octave midband
ve = vertical wall penetration	Pmax = maximum capacity	dB(A) = A-weighted decibel value
ho = horizontal floor penetration	GKB (type A) / GKF (type F): "GKB" stands for standard plasterboards (type A according to EN 520) while "GKF" plasterboards offer a higher fire resistance for a similar plate thickness (type F according to EN 520)	$\Delta L$ = correction factor
o -> i = meets the criteria from the outside (o) to the inside (i)	Cal-Sil = calcium silicate	
i << o = fire side not important	OP = option (delivered with the product)	
V AC = Volt alternating current	KIT = kit (delivered separately for repair or upgrade)	
V DC = Volt direct current	PG = connection flange to the duct	

	fire resistance 240 minutes		suitable for built-in installation
	intermediate dimensions on request		

# DECLARATION OF PERFORMANCE

CE\_DoP\_Rf-t\_G6\_EN - E-09/2018

1. Unique identification code of the product-type:	CU4		
2. Intended use/s:	Rectangular fire damper to be used in conjunction with partitions to maintain fire compartments in heating, ventilating and air conditioning installations.		
3. Manufacturer:	Rf-Technologies NV, Lange Ambachtstraat 40, B-9860 Oosterzele		
4. System/s of AVCP:	System 1		
5. Harmonised standard / European Assessment Document: notified body / European Technical Assessment, Technical Assessment Body, notified body, certificate of constancy of performance:	EN 15650:2010, BCCA with identification number 0749; BCCA-0749-CPR-BC1-606-0464-15650:04-0464; BCCA-0749-CPR-BC1-606-0464-15650:14-0464		

6. Declared performance according to EN 15650:2010 (Fire resistance according to EN 1366-2 and classifications according to EN 13501-3)

Essential characteristics	Performance	
	Installation	Classification
Range	1	EI 240 (v <sub>e</sub> , i ↔ o) S - (500 Pa)

1	Type of installation: built-in 0/180°	
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Nominal activation conditions/sensitivity:	Pass
Response delay (response time): closure time	Pass
Operational reliability: cycling	Pass
Durability of response delay:	Pass
Durability of operational reliability:	Pass
Protection against corrosion according to EN 60068-2-52:	Pass
Damper casing leakage according to EN 1751:	Pass
Harmonised standard	EN 15650:2010

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:  
**Mathieu Steenland**, Technical Manager



Oosterzele, 09/2018

## Product presentation CU4

### Product presentation CU4

Rectangular fire damper with a 240 minutes fire resistance in concrete walls. Its refractory casing is made of asbestos free panels, which are resistant to humidity.

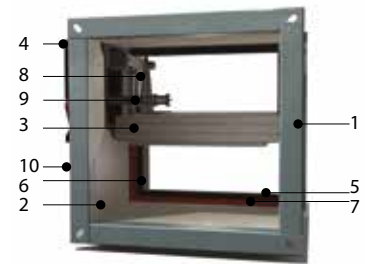
Fire dampers are installed where air ducts penetrate fire-resistant compartment walls. Their role is to restore the fire resistance grade of the penetrated wall and to prevent smoke propagation. Fire dampers are distinguished by their degree of fire resistance, by their aerulic properties as well as by their installation ease. Rf-Technologies' fire dampers are all CE marked. They can be equipped with various types of mechanisms depending on the specific needs linked to the project or to the local regulations.

fire resistance 240 minutes



- suitable for built-in installation
- air tightness in accordance with EN 1751: class B (class C in option )
- tested according to EN 1366-2 up to 500 Pa
- operating mechanism outside the wall
- maintenance-free
- for indoor use
- operating temperature: max. 50°C
- intermediate dimensions on request
- suitable for installation in rigid wall

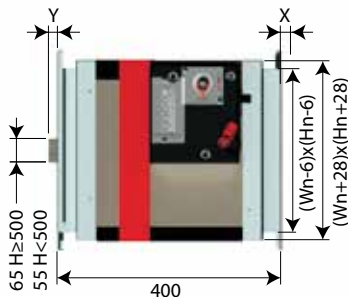
1. connection flange PG30
2. casing made of refractory material
3. damper blade
4. operating mechanism
5. sealing cold smoke
6. blade bumper
7. intumescent strip
8. transmission with locking (open/closed)
9. fusible link
10. product identification



### Range and dimensions CU4

Wn/Hn per step of 50 mm; intermediate dimensions are subject to extra cost (heights between  $\geq 275$  and  $\leq 299$  mm are not possible).

Exceeding blade: X = on the mechanism side, Y = on the wall side



Hn [mm]	300	350	400	450	500	550	600	650	700	750	800
x	-	-	-	-	-	-	25	50	75	100	125
y	1	26	51	51	101	126	151	176	201	226	251

	IV	V
(Wn x Hn) mm	200x200	1200x800

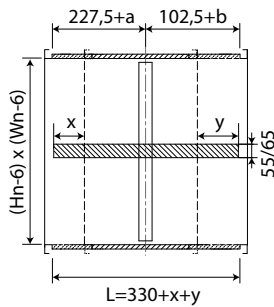
## Variant CU4L

Damper with a tunnel casing extension at one or both sides so that the damper blade does not exceed the tunnel. This version allows to connect a grill or a bend directly on the damper flange or to use a circular connection.

## Range and dimensions CU4L

Wn/Hn per step of 50 mm; intermediate dimensions are subject to extra cost (heights between  $\geq 275$  and  $\leq 299$  mm are not possible).

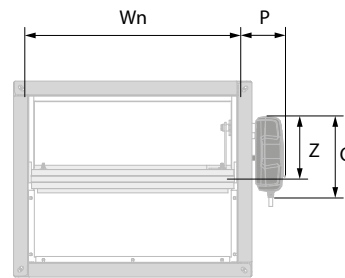
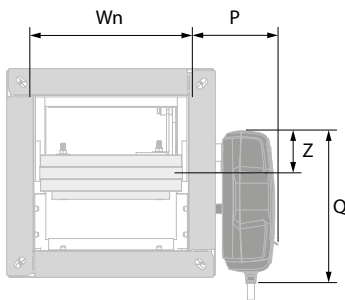
Exceeding blade: X = on the mechanism side, Y = on the wall side



	IV	V
(Wn x Hn) mm	200x200	1200x800

Hn < 300 mm


Hn ≥ 300 mm










	CFTH	ONE	BFL(T)
<b>P</b>	78	104	96
<b>Q</b>	180	191	110
<b>Z</b>	62	47	74

	CFTH	ONE	BFL(T)	BFN(T)
<b>P</b>	78	104	96	100
<b>Q</b>	180	191	110	110
<b>Z</b>	157	147	180	180

## Evolution - kits

	<b>KITS CFTH</b>	Automatic unlocking mechanism CFTH with FCU and without FTH 72
	<b>KITS BFL24</b>	Spring return actuator BFL 24V
	<b>KITS BFL24-ST</b>	Spring return actuator BFL 24V with plug (ST)
	<b>KITS BFLT24</b>	Spring return actuator BFL 24V with thermo-electric fuse (T)
	<b>KITS BFLT24-ST</b>	Spring return actuator BFL 24V with thermo-electric fuse (T) and plug (ST)
	<b>KITS BFL230</b>	Spring return actuator BFL 230V
	<b>KITS BFLT230</b>	Spring return actuator BFL 230V with thermo-electric fuse (T)
	<b>KITS BFN24</b>	Spring return actuator BFN 24V (BFN kits must be used instead of BFL kits for fire dampers produced before 1/7/2015)
	<b>KITS BFN24</b>	Spring return actuator BFN 24V

	<b>KITS BFN24-ST</b>	Spring return actuator BFN 24V with plug (ST)
	<b>KITS BFN24</b>	Spring return actuator BFN 24V with thermo-electric fuse (T)
	<b>KITS BFN24-ST</b>	Spring return actuator BFN 24V with thermo-electric fuse (T) and plug (ST)
	<b>KITS BFN230</b>	Spring return actuator BFN 230V
	<b>KITS BFN230</b>	Spring return actuator BFN 230V with thermo-electric fuse (T)
	<b>KITS BF24</b>	Spring return actuator BF 24V (BF kits must be used instead of BFN kits for fire dampers produced before 1/7/2015)
	<b>KITS ONE T 24 FDCU</b>	Spring return actuator ONE 24V (with fusible link T) + unipolar beginning- and end-of-range switch
	<b>KITS ONE T 24 FDCB</b>	Spring return actuator ONE 24V (with fusible link T) + bipolar beginning- and end-of-range switch
	<b>KITS ONE T 230 FDCU</b>	Spring return actuator ONE 230V (with fusible link T) + unipolar beginning- and end-of-range switch

	<b>KITS ONE T 230 FDCB</b>	Spring return actuator ONE 230V (with fusible link T) + bipolar beginning- and end-of-range switch
	<b>KITS FDC CFTH</b>	1 limit switch (FCU/DCU/FCB/DCB)
	<b>KITS SN2 BFL/BFN</b>	Auxiliary limit switch 'open/closed'
	<b>KITS FTH72</b>	Fusible link FTH 72°C (for CFTH)
	<b>KITS ZBAT 72</b>	Black spare part for thermo-electric fuse for BFLT/BFNT
	<b>FUS72 ONE</b>	Fusible link 72°C
	<b>MECT</b>	Testbox for mechanisms 24/48 V (magnet, motor, beginning and end of range switches)

Options - at the time of order

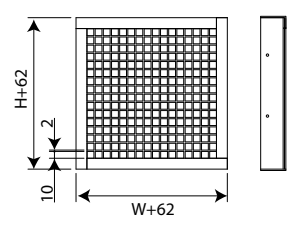
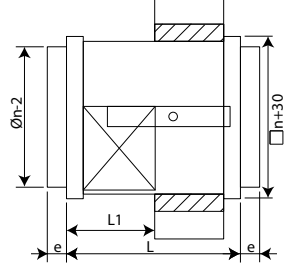
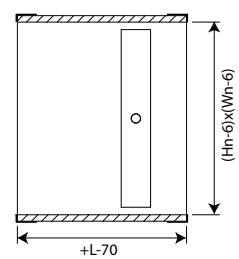
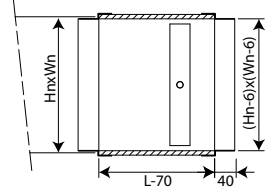
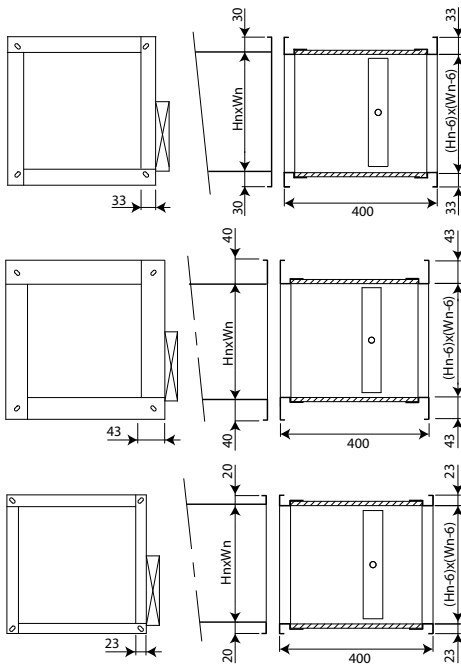


**EN1751\_C**

Air-tightness class C



## Flange types - at the time of order



<b>PG30</b>	Connection to ducts with 30 mm flanges (either by sliding profile, or with bolts, or with clamps). Elliptical holes Ø 8,5 x 16 mm.
<b>PG40</b>	Connection to ducts with 40 mm flanges. Elliptical holes Ø 8,5 x 16 mm.
<b>PG20</b>	Connection to ducts with 20 mm flanges. Elliptical holes Ø 6,5 x 16 mm.
<b>PM</b>	Connection to ducts by insertion. This type of frame is used in case of lack of space for a standard PG30 frame.
<b>PP</b>	No connection. This type of frame is used on one side of a damper that ends into a room.
<b>PRJ</b>	Circular connection with rubber sealing ring.
<b>PPT</b>	Grill. Very well suited as protection grill on the end piece of a duct system.

## Storage and handling

As this product is a safety element, it should be stored and handled with care.

### Avoid:

- any kind of impact or damage
- contact with water
- deformation of the casing

### It is recommended:

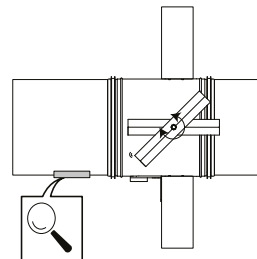
- to unload in a dry area
- not to flip or roll the product to move it
- not to use the damper as a scaffold, working table, etc.
- not to store smaller dampers inside larger ones

## Installation

### General points

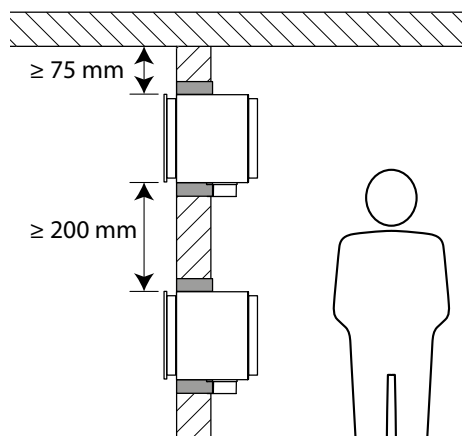
- The installation must comply with the installation manual delivered with the product and the classification report.
- Axis orientation: see the declaration of performance.
- Avoid obstruction of adjoining ducts.
- Product installation: always with closed damper blade.
- Verify if the blade can move freely.
- Please observe safety distances with respect to other construction elements. The operating mechanism must also remain accessible: allow for a clearance of 200 mm around the housing.
- The air tightness class will be maintained if the damper is installed according to the installation manual.
- Rf-t fire dampers are always tested in standardised constructions according to EN 1366-2. The achieved results are valid for similar supporting constructions with a fire resistance, thickness and density equal or superior to the supporting construction used during the test.
- The damper must remain accessible for inspection and maintenance.
- Schedule at least two running visual checks each year.

	TEST	
2017	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2018	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2019	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2020	<input type="checkbox"/>	<input type="checkbox"/>
2021	<input type="checkbox"/>	<input type="checkbox"/>



### Installation at a minimal distance from another damper or from an adjacent supporting construction

1



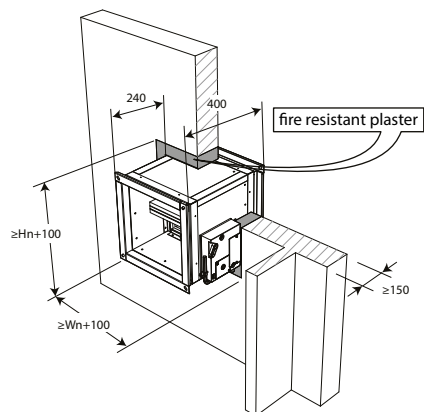
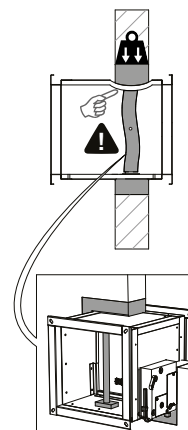
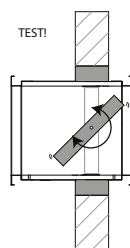
#### 1. Principle

According to the European test standard, a fire damper must be installed at a minimum distance of 75 mm from an adjacent wall and 200 mm from another damper, unless the solution was tested at a shorter distance.

## Installation in rigid wall

The product was tested and approved in:

Range	Wall type	Sealing	Classification
$200 \times 200 \text{ mm} \leq \text{CU4} \leq 1200 \times 800 \text{ mm}$	Rigid wall	Aerated concrete $\geq 150 \text{ mm}$	Fire-resistant gypsum EI 240 (v <sub>e</sub> i ↔ o) S - (500 Pa)

**1**

**2**

**3**


## Maintenance

- No specific maintenance required.
- Schedule at least two running visual checks each year.
- Remove dust and all other particles before start-up.
- Follow the local maintenance regulations (i.e. BS9999 Annex V; NF S 61-933) and EN13306.
- Read the maintenance instructions on our website: [https://www.rft.be/assets//PIM/DOCUMENTS/BROCHURE%20KITS/BRO\\_K139\\_MAINTENANCE\\_C.pdf](https://www.rft.be/assets//PIM/DOCUMENTS/BROCHURE%20KITS/BRO_K139_MAINTENANCE_C.pdf)
- Use the damper at up to 95% humidity, non-condensing.
- The fire damper can be cleaned with a dry or slightly damp cloth. It is forbidden to use abrasive cleaners or mechanical cleaning techniques (brush).

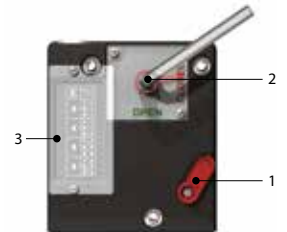
## Operation and mechanisms



### CFTH Mechanism with fusible link

The unlocking mechanism CFTH automatically unlatches the damper blade when the temperature in the duct rises above 72°C. The damper can also be unlocked and reset manually.

1. unlocking button
2. resetting handle
3. cable entrance



### Options - at the time of order

FCU	Limit switch 'closed'
FDCU	Unipolar limit switch 'open/closed'
FDCB	Bipolar auxiliary limit switch 'open/closed'

### Unlocking

- **manual unlocking:** use the unlocking button (1).
- **automatic unlocking:** when the fusible link melts at 72° C.
- **remote unlocking:** n/a

### Resetting

- **manual resetting:** use the enclosed Hex key and turn clockwise(2).
- **motorised resetting:** n/a

### Caution:

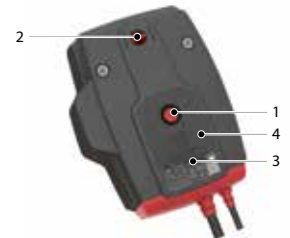
- ⚠ The mechanism may never be tested on its own, without being attached to the damper. Such a test might damage the mechanism or the operator might be injured.



## ONE Spring return actuator for remote control

The spring-return actuator ONE is designed to easily operate Rf-t fire dampers of all sizes, automatically or remotely. Five models are available, 24 or 230 volt, with FDCU or FDCB position switches; and 24 volt with plug (ST).

1. unlocking button
2. blade position indicator
3. LED
4. battery compartment to reset motor
5. plug (ST)



### Options - at the time of order

IKI-R1	Universal field controller (Modbus, BACnet or analog connection), pre-mounted on the damper.
IKI-R2-24	Universal field controller (Modbus, BACnet), pre-mounted on the damper and with a connection for a second damper.
IKI-R2-230	Universal field controller (Modbus, BACnet), pre-mounted on the damper and with a connection for a second damper.

### Unlocking

- **manual unlocking:** shortly press the unlocking button (1) once.
- **automatic unlocking:** the fusible link reacts as soon as the temperature in the duct reaches 72°C.
- **remote unlocking:** by interrupting the power supply.

### Resetting

- **manual resetting:** open the battery compartment (4) and press a 9V battery against the contact springs. Hold this position until the LED (3) emits a continuous light. Check whether the indicator (2) shows that the damper blade is in the open position. Remove the battery, the LED fades away. Close the battery compartment.
- **motorised resetting:** switch off the power supply for at least 5 sec. Power the actuator (respect the prescribed voltage) for at least 75 sec. The resetting stops automatically when the end of range is reached (damper open).

### Caution:

- ⚠ If the LED (3) flickers fast (3x/sec.), the battery is discharged: use a new battery.
- ⚠ If the LED (3) flickers slowly (1x/sec), the resetting is in progress.
- ⚠ If the LED (3) is continuously on, the resetting is complete and the motor is powered.
- ⚠ If the actuator detects voltage on the power cable, a brief contact of the battery is enough to start the resetting process.
- ⚠ The power supply of this actuator cannot be individually replaced. If the cable is damaged, the whole unit must be discarded and replaced.
- ⚠ The housing of the mechanism contains a temperature sensor. When the temperature in the housing exceeds 72°C, the mechanism unlocks. The LED flashes twice per second. When the temperature drops below 72°C, the mechanism can only be reset in a motorised manner after a manual reset (with a battery).
- ⚠ The end of range switches need 1 second after operation to adopt a stable position.
- ⚠ Make sure the thermal trigger device is present in the actuator. The actuator might not function properly if this is not the case.

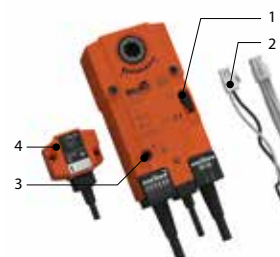
	prod. < 1/7/2015				prod. ≥ 1/7/2015			
	CR60(1s) CR120	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200	CR60(1s) CR120(1s)	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200
Kit ONE	●	●	●		●	●	●	●



## BFL(T) Remotely controlled spring return actuator

The spring return actuator BFL(T) is specially designed to remotely control fire dampers. The BFL(T) model is intended for fire dampers with smaller dimensions ( $\varnothing \leq 400$  mm or  $W+H \leq 1200$  mm/1400 mm for CU-LT, CU-LT-1s).

1. locking button
2. plug (ST)
3. access for manual resetting
4. thermo-electric tripping device (T)



### Options - at the time of order

SN2 BFL/BFN	Auxiliary limit switch 'open/closed'
IXI-R1	Universal field controller (Modbus, BACnet or analog connection), pre-mounted on the damper.
IXI-R2-24	Universal field controller (Modbus, BACnet), pre-mounted on the damper and with a connection for a second damper.
IXI-R2-230	Universal field controller (Modbus, BACnet), pre-mounted on the damper and with a connection for a second damper.

### Unlocking

- **manual unlocking:** place the locking button on "unlock". (In case of BFLT: the damper can alternatively be unlocked by pushing the "test" button on the thermo-electric fuse)
- **automatic unlocking:** the thermo-electric fuse reacts as soon as the temperature reaches 72°C (type BFLT).
- **remote unlocking:** by interrupting the power supply.

#### Caution:

- ⚠ The thermo-electric fuse will not move the damper into its safety position (when the temperature reaches 72°C) if the motor is not powered.

### Resetting

- **manual resetting:** turn the enclosed handle anti-clockwise. To block the motor, place the locking button on "lock"
- **motorised resetting:** switch off the power supply for at least 10 seconds. Supply the actuator (respect the prescribed voltage) for at least 75 seconds. The resetting stops automatically when the end of range is reached (damper open) - it takes about 60 seconds to reset the damper - or when the power supply is interrupted.

#### Caution:

- ⚠ Do not use a drill or screwing machine.
- ⚠ Stop as soon as the motor is completely rearmed (end of range).

	prod. < 1/7/2015				prod. ≥ 1/7/2015			
	CR60(1s) CR120	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200	CR60(1s) CR120 (1s)	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200
Kit BFL					●	●	●	
Kit BFN	●	●	●					●
Kit BF				●				



## BFN(T) Remotely controlled spring return actuator

The spring return actuator BFN(T) is specially designed to remotely control fire dampers. The BFN(T) model is intended for fire dampers with large dimensions ( $\varnothing > 400$  mm (CR2) or W+H > 1200 mm (CU2, CA2, CU2-15, CU4)) or for dampers CU-LT(-1s), CR60, CR120 with a production date before 1 July 2015.

1. locking button
2. plug (ST)
3. access for manual resetting
4. thermo-electric tripping device (T)



### Options - at the time of order

SN2 BFL/BFN	Auxiliary limit switch 'open/closed'
IXI-R1	Universal field controller (Modbus, BACnet or analog connection), pre-mounted on the damper.
IXI-R2-24	Universal field controller (Modbus, BACnet), pre-mounted on the damper and with a connection for a second damper.
IXI-R2-230	Universal field controller (Modbus, BACnet), pre-mounted on the damper and with a connection for a second damper.

### Unlocking

- **manual unlocking:** place the locking button on “unlock”. (In case of BFNT: the damper can alternatively be unlocked by pushing the “test” button on the thermo-electric fuse)
- **automatic unlocking:** the thermo-electric fuse reacts as soon as the temperature reaches 72°C (type BFNT).
- **remote unlocking:** by interrupting the power supply.

#### Caution:

- ▲ The thermo-electric fuse will not move the damper into its safety position (when the temperature reaches 72°C) if the motor is not powered.

### Resetting

- **manual resetting:** turn the enclosed handle anti-clockwise. To block the motor, place the locking button on “lock”
- **motorised resetting:** switch off the power supply for at least 10 seconds. Supply the actuator (respect the prescribed voltage) for at least 75 seconds. The resetting stops automatically when the end of range is reached (damper open) - it takes about 60 seconds to reset the damper - or when the power supply is interrupted.

#### Caution:

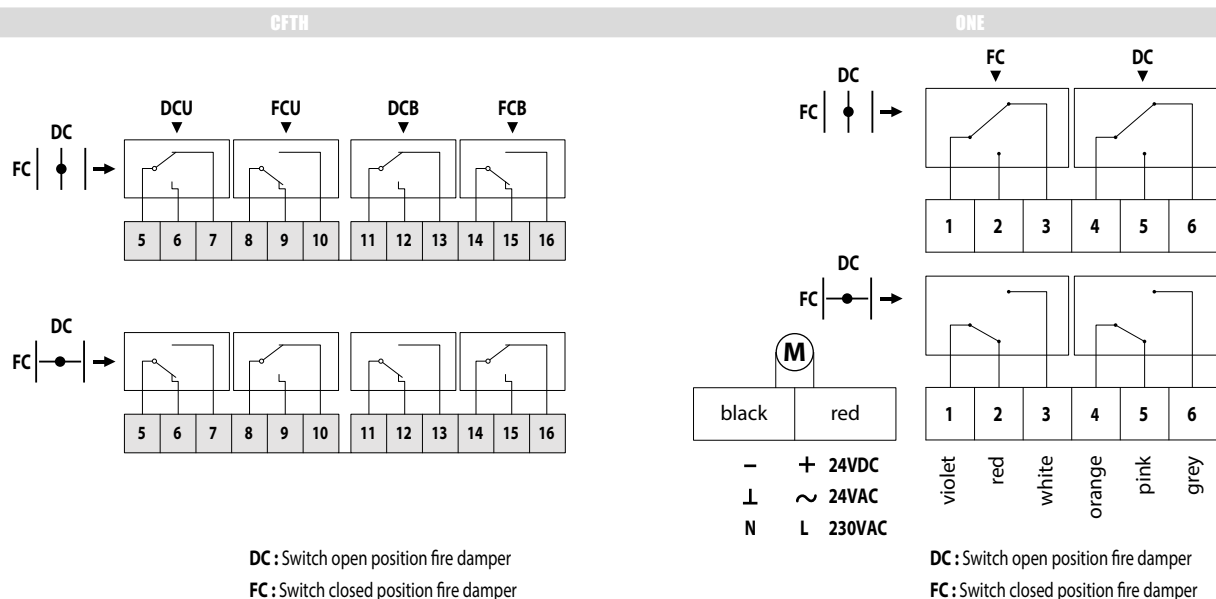
- ▲ Do not use a drill or screwing machine.
- ▲ Stop as soon as the motor is completely rearmed (end of range).

#### Caution:

- ▲ The mechanism may never be tested on its own, without being attached to the damper. Such a test might damage the mechanism or the operator might be injured.

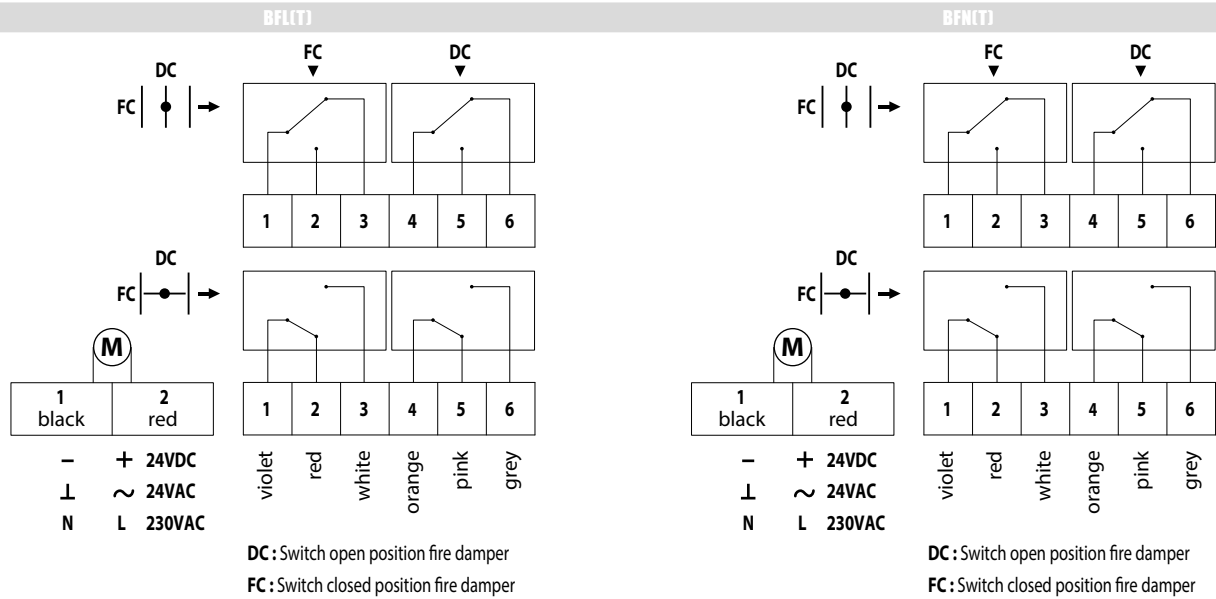
	prod. < 1/7/2015				prod. ≥ 1/7/2015			
	CR60(1s) CR120	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200	CR60(1s) CR120 (1s)	CU-LT CU-LT-1s	CR2≤400 CU2≤1200	CR2>400 CU2>1200
Kit BFL					●	●	●	
Kit BFN	●	●	●					●
Kit BF				●				

## Electrical connection



MEC	Nominal voltage motor	Nominal voltage magnet	Power consumption (stand-by)	Power consumption (operating)	Standard switches
CFTH	N/A	N/A	N/A	N/A	1mA...6A, DC 5V...AC 250V
ONET 24 FDCU	24 V AC/DC (-10/+20%)	N/A	0,28W	4,2W	1mA...1A 60V
ONET 24 FDCB	24 V AC/DC (-10/+20%)	N/A	0,28W	4,2W	1mA...1A 60V
ONET 230 FDCU	230 V AC (-15/+15%)	N/A	0,57W	4,2W	1mA...1A 60V
ONET 230 FDCB	230 V AC (-15/+15%)	N/A	0,57W	4,2W	1mA...1A 60V
ONET 24 FDCU ST	24 V AC/DC (-10/+20%)	N/A	0,28W	4,2W	1mA...1A 60V
BFL24	24 V AC/DC	N/A	0,7W	2,5W	1mA...3A, AC 250V
BFL24-ST	24 V AC/DC	N/A	0,7W	2,5W	1mA...3A, AC 250V
BFLT24	24 V AC/DC	N/A	0,8W	2,5W	1mA...3A, AC 250V
BFLT24-ST	24 V AC/DC	N/A	0,8W	2,5W	1mA...3A, AC 250V
BFL230	230 V AC	N/A	1,1W	3,5W	1mA...3A, AC 250V
BFLT230	230 V AC	N/A	1,4W	4W	1mA...3A, AC 250V
BFN24	24 V AC/DC	N/A	1W	4W	1mA...3A, AC 250V
BFN24-ST	24 V AC/DC	N/A	1W	4W	1mA...3A, AC 250V
BFNT24	24 V AC/DC	N/A	1,1W	4W	1mA...3A, AC 250V
BFNT24-ST	24 V AC/DC	N/A	1,1W	4W	1mA...3A, AC 250V
BFN230	230 V AC	N/A	1,5W	5W	1mA...3A, AC 250V
BFNT230	230 V AC	N/A	1,8W	5,5W	1mA...3A, AC 250V





Resetting time motor	Running time spring	Noise level motor	Noise level spring	Cable supply / control	Cable auxiliary switch	Protection class
N/A	1 s	N/A	N/A			IP 42
< 75 s (cabled) / < 85 s (battery)	< 30 s	< 58 dB (A)	< 60 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup>	1 m, 6 x 0.75 mm <sup>2</sup>	IP 54
< 75 s (cabled) / < 85 s (battery)	< 30 s	< 58 dB (A)	< 60 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup>	(2x) 1 m, 6 x 0.75 mm <sup>2</sup>	IP 54
< 75 s (cabled) / < 85 s (battery)	< 30 s	< 58 dB (A)	< 60 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup>	1 m, 6 x 0.75 mm <sup>2</sup>	IP 54
< 75 s (cabled) / < 85 s (battery)	< 30 s	< 58 dB (A)	< 60 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup>	(2x) 1 m, 6 x 0.75 mm <sup>2</sup>	IP 54
< 75 s (cabled) / < 85 s (battery)	< 30 s	< 58 dB (A)	< 60 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup>	1 m, 6 x 0.75 mm <sup>2</sup>	IP 54
< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.34 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.34 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	< 43 dB (A)	< 62 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	≤ 55 dB (A)	ca. 70 dB (A)	1 m, 2 x 0.34 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	≤ 55 dB (A)	ca. 70 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	≤ 55 dB (A)	ca. 70 dB (A)	1 m, 2 x 0.34 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	≤ 55 dB (A)	ca. 70 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	≤ 55 dB (A)	ca. 70 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54
< 60 s	20 s	≤ 55 dB (A)	ca. 70 dB (A)	1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	IP 54



## CU4 + BFLT

Hn\Wn (mm)		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
200	kg	11,2	12,5	13,7	14,9	16,1	17,4	18,6	19,8	21,0	22,3	23,5	24,7	25,9	27,1	28,4	29,6	30,8	-	-	-	-
250	kg	12,5	13,8	15,2	16,5	17,8	19,2	20,5	21,9	23,2	24,5	25,9	27,2	28,6	29,9	31,3	32,6	-	-	-	-	-
300	kg	13,7	15,2	16,6	18,1	19,5	21,0	22,5	23,9	25,4	26,8	28,3	29,8	31,2	32,7	34,2	-	-	-	-	-	-
350	kg	14,9	16,5	18,1	19,7	21,2	22,8	24,4	26,0	27,6	29,1	30,7	32,3	33,9	35,5	-	-	-	-	-	-	-
400	kg	16,1	17,8	19,5	21,2	22,9	24,6	26,3	28,0	29,7	31,4	33,1	34,8	36,6	-	-	-	-	-	-	-	-
450	kg	17,4	19,2	21,0	22,8	24,6	26,5	28,3	30,1	31,9	33,7	35,6	37,4	-	-	-	-	-	-	-	-	-
500	kg	18,6	20,5	22,5	24,4	26,3	28,3	30,2	32,2	34,1	36,0	38,0	-	-	-	-	-	-	-	-	-	-
550	kg	19,8	21,9	23,9	26,0	28,0	30,1	32,2	34,2	36,3	38,3	-	-	-	-	-	-	-	-	-	-	-
600	kg	21,0	23,2	25,4	27,6	29,7	31,9	34,1	36,3	38,5	-	-	-	-	-	-	-	-	-	-	-	-
650	kg	22,3	24,5	26,8	29,1	31,4	33,7	36,0	38,3	-	-	-	-	-	-	-	-	-	-	-	-	-
700	kg	23,5	25,9	28,3	30,7	33,1	35,6	38,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
750	kg	24,7	27,2	29,8	32,3	34,8	37,4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800	kg	25,9	28,6	31,2	33,9	36,6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

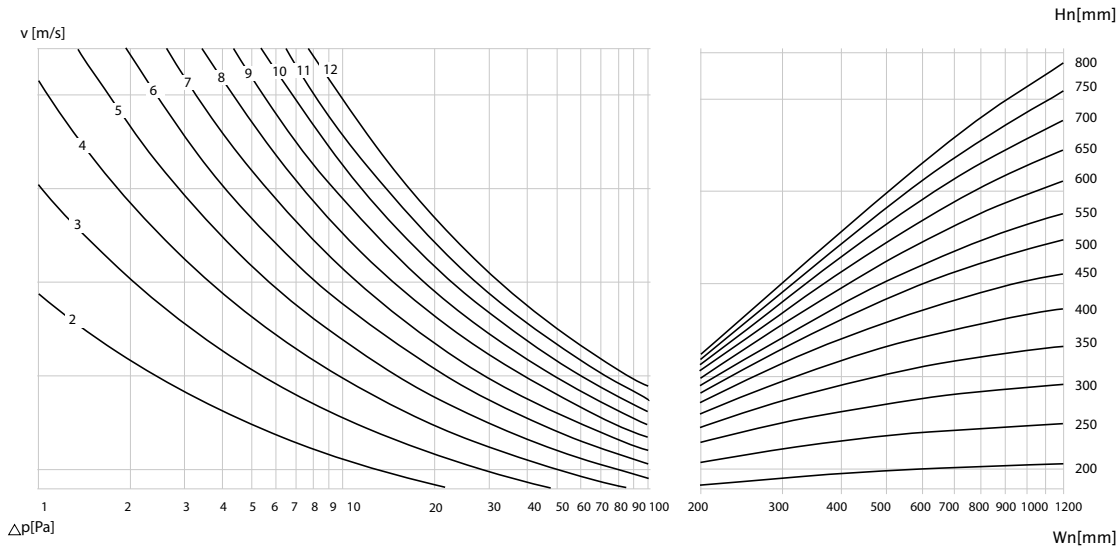
## CU4 + BFN

Hn\Wn (mm)		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32,2	33,5	34,7	35,9
250	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34,1	35,5	36,8	38,2	39,5
300	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35,8	37,3	38,7	40,2	41,7	43,1
350	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37,3	38,8	40,4	42,0	43,6	45,2	46,7
400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	38,5	40,2	41,9	43,6	45,3	47,0	48,7	50,4
450	kg	-	-	-	-	-	-	-	-	-	-	-	-	39,4	41,2	43,1	44,9	46,7	48,5	50,3	52,2	54,0
500	kg	-	-	-	-	-	-	-	-	-	-	40,1	42,1	44,0	45,9	47,9	49,8	51,8	53,7	55,6	57,6	
550	kg	-	-	-	-	-	-	-	-	-	40,6	42,7	44,7	46,8	48,8	50,9	53,0	55,0	57,1	59,1	61,2	
600	kg	-	-	-	-	-	-	-	-	40,8	43,0	45,2	47,4	49,6	51,7	53,9	56,1	58,3	60,5	62,6	64,8	
650	kg	-	-	-	-	-	-	-	40,8	43,1	45,4	47,7	50,0	52,3	54,6	56,9	59,2	61,5	63,8	66,1	68,4	
700	kg	-	-	-	-	-	-	40,6	43,0	45,4	47,9	50,3	52,7	55,1	57,5	60,0	62,4	64,8	67,2	69,6	72,1	
750	kg	-	-	-	-	-	40,1	42,7	45,2	47,7	50,3	52,8	55,4	57,9	60,4	63,0	65,5	68,1	70,6	73,1	75,7	
800	kg	-	-	-	-	39,4	42,1	44,7	47,4	50,0	52,7	55,4	58,0	60,7	63,3	66,0	68,6	71,3	74,0	76,6	79,3	

## CU4 + BFNT

Hn\Wn (mm)		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32,3	33,6	34,8	36,0
250	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34,2	35,6	36,9	38,3	39,6
300	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35,9	37,4	38,8	40,3	41,8	43,2
350	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37,4	38,9	40,5	42,1	43,7	45,3	46,8
400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	38,6	40,3	42,0	43,7	45,4	47,1	48,8	50,5
450	kg	-	-	-	-	-	-	-	-	-	-	-	-	39,5	41,3	43,2	45,0	46,8	48,6	50,4	52,3	54,1
500	kg	-	-	-	-	-	-	-	-	-	-	40,2	42,2	44,1	46,0	48,0	49,9	51,9	53,8	55,7	57,7	
550	kg	-	-	-	-	-	-	-	-	-	40,7	42,8	44,8	46,9	48,9	51,0	53,1	55,1	57,2	59,2	61,3	
600	kg	-	-	-	-	-	-	-	-	40,9	43,1	45,3	47,5	49,7	51,8	54,0	56,2	58,4	60,6	62,7	64,9	
650	kg	-	-	-	-	-	-	-	40,9	43,2	45,5	47,8	50,1	52,4	54,7	57,0	59,3	61,6	63,9	66,2	68,5	
700	kg	-	-	-	-	-	-	40,7	43,1	45,5	48,0	50,4	52,8	55,2	57,6	60,1	62,5	64,9	67,3	69,7	72,2	
750	kg	-	-	-	-	-	40,2	42,8	45,3	47,8	50,4	52,9	55,5	58,0	60,5	63,1	65,6	68,2	70,7	73,2	75,8	
800	kg	-	-	-	-	39,5	42,2	44,8	47,5	50,1	52,8	55,5	58,1	60,8	63,4	66,1	68,7	71,4	74,1	76,7	79,4	

## Selection graphs



$$\Delta p \text{ [Pa]} = \zeta \cdot v^2 \cdot 0,6$$

Hn\Wn [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
<b>200</b> ζ [-]	8,46	7,33	6,67	6,25	5,95	5,73	5,56	5,42	5,31	5,22	5,14	5,08	5,02	4,97	4,93	4,89	4,86	4,83	4,8	4,77	4,75
<b>250</b> ζ [-]	4,44	3,68	3,24	2,96	2,77	2,63	2,52	2,44	2,37	2,31	2,26	2,22	2,19	2,16	2,13	2,11	2,09	2,07	2,05	2,04	2,02
<b>300</b> ζ [-]	2,92	2,32	1,99	1,79	1,64	1,54	1,46	1,4	1,35	1,31	1,27	1,25	1,22	1,2	1,18	1,16	1,15	1,14	1,12	1,11	1,1
<b>350</b> ζ [-]	2,16	1,67	1,4	1,23	1,11	1,03	0,97	0,92	0,88	0,85	0,82	0,8	0,78	0,77	0,75	0,74	0,73	0,72	0,71	0,7	0,69
<b>400</b> ζ [-]	1,72	1,29	1,06	0,92	0,82	0,75	0,7	0,66	0,63	0,6	0,58	0,56	0,55	0,53	0,52	0,51	0,5	0,5	0,49	0,48	0,48
<b>450</b> ζ [-]	1,44	1,06	0,85	0,73	0,64	0,58	0,54	0,5	0,48	0,45	0,44	0,42	0,41	0,4	0,39	0,38	0,37	0,36	0,36	0,35	0,35
<b>500</b> ζ [-]	1,25	0,9	0,71	0,6	0,52	0,47	0,43	0,4	0,38	0,36	0,34	0,33	0,32	0,31	0,3	0,29	0,29	0,28	0,27	0,27	0,27
<b>550</b> ζ [-]	1,13	0,8	0,63	0,52	0,46	0,41	0,37	0,34	0,32	0,3	0,29	0,28	0,27	0,26	0,25	0,24	0,24	0,23	0,23	0,22	0,22
<b>600</b> ζ [-]	1,02	0,71	0,55	0,45	0,39	0,35	0,31	0,29	0,27	0,25	0,24	0,23	0,22	0,21	0,21	0,2	0,19	0,19	0,19	0,18	0,18
<b>650</b> ζ [-]	0,94	0,64	0,49	0,4	0,34	0,3	0,27	0,25	0,23	0,22	0,2	0,19	0,19	0,18	0,17	0,17	0,16	0,16	0,15	0,15	0,15
<b>700</b> ζ [-]	0,87	0,59	0,44	0,36	0,3	0,27	0,24	0,22	0,2	0,19	0,18	0,17	0,16	0,15	0,15	0,14	0,14	0,13	0,13	0,13	0,13
<b>750</b> ζ [-]	0,81	0,54	0,41	0,33	0,27	0,24	0,21	0,19	0,18	0,16	0,15	0,15	0,14	0,13	0,13	0,12	0,12	0,12	0,11	0,11	0,11
<b>800</b> ζ [-]	0,77	0,51	0,38	0,3	0,25	0,22	0,19	0,17	0,16	0,15	0,14	0,13	0,12	0,12	0,11	0,11	0,1	0,1	0,1	0,1	0,09

## Example

## Data

Hn = 400 mm, Wn = 500 mm, v = 4 m/s

## Required

Δp = ca. 6.8 Pa (Cfr. selection graph)

## Calculation

Δp = 0.7 \* (4 m/s)<sup>2</sup> \* 0.6 = 6.72 Pa

Selection data

CU4 - CU4L - Free air passage

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700
200	Sn [m <sup>2</sup> ]	0,0128	0,0173	0,0217	0,0262	0,0306	0,0351	0,0395	0,0440	0,0484	0,0529	0,0573
	Sn [%]	34,05	36,48	38,07	39,21	40,05	40,71	41,23	41,66	42,01	42,31	42,57
250	Sn [m <sup>2</sup> ]	0,0200	0,0270	0,0339	0,0409	0,0478	0,0548	0,0617	0,0687	0,0756	0,0826	0,0895
	Sn [%]	42,28	45,29	47,28	48,69	49,74	50,55	51,20	51,73	52,17	52,54	52,86
300	Sn [m <sup>2</sup> ]	0,0272	0,0367	0,0461	0,0556	0,0650	0,0745	0,0839	0,0934	0,1028	0,1123	0,1217
	Sn [%]	47,72	51,11	53,35	54,94	56,13	57,05	57,78	58,38	58,87	59,29	59,65
350	Sn [m <sup>2</sup> ]	0,0344	0,0464	0,0583	0,0703	0,0822	0,0942	0,1061	0,1181	0,1300	0,1420	0,1539
	Sn [%]	51,57	55,24	57,66	59,38	60,66	61,65	62,44	63,09	63,63	64,08	64,47
400	Sn [m <sup>2</sup> ]	0,0416	0,0561	0,0705	0,0850	0,0994	0,1139	0,1283	0,1428	0,1572	0,1717	0,1861
	Sn [%]	54,45	58,32	60,88	62,69	64,04	65,09	65,93	66,61	67,18	67,66	68,07
450	Sn [m <sup>2</sup> ]	0,0488	0,0658	0,0827	0,0997	0,1166	0,1336	0,1505	0,1675	0,1844	0,2014	0,2183
	Sn [%]	56,67	60,71	63,37	65,25	66,66	67,75	68,62	69,33	69,92	70,42	70,85
500	Sn [m <sup>2</sup> ]	0,0546	0,0735	0,0925	0,1114	0,1304	0,1493	0,1683	0,1872	0,2062	0,2251	0,2441
	Sn [%]	56,95	61,00	63,67	65,57	66,98	68,08	68,96	69,67	70,26	70,76	71,19
550	Sn [m <sup>2</sup> ]	0,0618	0,0832	0,1047	0,1261	0,1476	0,1690	0,1905	0,2119	0,2334	0,2548	0,2763
	Sn [%]	58,54	62,70	65,45	67,40	68,85	69,98	70,88	71,61	72,22	72,74	73,18
600	Sn [m <sup>2</sup> ]	0,0690	0,0929	0,1169	0,1408	0,1648	0,1887	0,2127	0,2366	0,2606	0,2845	0,3085
	Sn [%]	59,86	64,12	66,93	68,92	70,41	71,56	72,48	73,23	73,85	74,38	74,83
650	Sn [m <sup>2</sup> ]	0,0762	0,1026	0,1291	0,1555	0,1820	0,2084	0,2349	0,2613	0,2878	0,3142	0,3407
	Sn [%]	60,97	65,31	68,17	70,20	71,72	72,89	73,83	74,59	75,23	75,77	76,22
700	Sn [m <sup>2</sup> ]	0,0834	0,1123	0,1413	0,1702	0,1992	0,2281	0,2571	0,2860	0,3150	0,3439	0,3729
	Sn [%]	61,93	66,33	69,24	71,30	72,84	74,03	74,99	75,76	76,41	76,95	77,42
750	Sn [m <sup>2</sup> ]	0,0906	0,1220	0,1535	0,1849	0,2164	0,2478	0,2793	0,3107	0,3422	0,3736	0,4051
	Sn [%]	62,75	67,22	70,16	72,25	73,81	75,02	75,99	76,77	77,43	77,98	78,45
800	Sn [m <sup>2</sup> ]	0,0978	0,1317	0,1657	0,1996	0,2336	0,2675	0,3015	0,3354	0,3694	0,4033	0,4373
	Sn [%]	63,48	67,99	70,97	73,09	74,66	75,89	76,86	77,66	78,32	78,88	79,36

Hn\Wn [mm]		750	800	850	900	950	1000	1050	1100	1150	1200
200	Sn [m <sup>2</sup> ]	0,0618	0,0662	0,0707	0,0751	0,0796	0,0840	0,0885	0,0929	0,0974	0,1018
	Sn [%]	42,79	42,99	43,16	43,31	43,45	43,57	43,68	43,78	43,87	43,96
250	Sn [m <sup>2</sup> ]	0,0965	0,1034	0,1104	0,1173	0,1243	0,1312	0,1382	0,1451	0,1521	0,1590
	Sn [%]	53,14	53,38	53,59	53,78	53,95	54,10	54,24	54,36	54,48	54,58
300	Sn [m <sup>2</sup> ]	0,1312	0,1406	0,1501	0,1595	0,1690	0,1784	0,1879	0,1973	0,2068	0,2162
	Sn [%]	59,97	60,24	60,48	60,69	60,88	61,05	61,21	61,35	61,48	61,59
350	Sn [m <sup>2</sup> ]	0,1659	0,1778	0,1898	0,2017	0,2137	0,2256	0,2376	0,2495	0,2615	0,2734
	Sn [%]	64,81	65,10	65,36	65,59	65,80	65,98	66,15	66,30	66,44	66,57
400	Sn [m <sup>2</sup> ]	0,2006	0,2150	0,2295	0,2439	0,2584	0,2728	0,2873	0,3017	0,3162	0,3306
	Sn [%]	68,42	68,73	69,00	69,25	69,47	69,66	69,84	70,00	70,14	70,28
450	Sn [m <sup>2</sup> ]	0,2353	0,2522	0,2692	0,2861	0,3031	0,3200	0,3370	0,3539	0,3709	0,3878
	Sn [%]	71,22	71,54	71,83	72,08	72,31	72,51	72,69	72,86	73,01	73,15
500	Sn [m <sup>2</sup> ]	0,2630	0,2820	0,3009	0,3199	0,3388	0,3578	0,3767	0,3957	0,4146	0,4336
	Sn [%]	71,56	71,89	72,18	72,43	72,66	72,86	73,05	73,21	73,37	73,51
550	Sn [m <sup>2</sup> ]	0,2977	0,3192	0,3406	0,3621	0,3835	0,4050	0,4264	0,4479	0,4693	0,4908
	Sn [%]	73,56	73,89	74,19	74,45	74,68	74,89	75,08	75,26	75,41	75,56
600	Sn [m <sup>2</sup> ]	0,3324	0,3564	0,3803	0,4043	0,4282	0,4522	0,4761	0,5001	0,5240	0,5480
	Sn [%]	75,22	75,56	75,86	76,13	76,37	76,58	76,78	76,95	77,12	77,26
650	Sn [m <sup>2</sup> ]	0,3671	0,3936	0,4200	0,4465	0,4729	0,4994	0,5258	0,5523	0,5787	0,6052
	Sn [%]	76,62	76,97	77,28	77,55	77,79	78,01	78,21	78,39	78,55	78,70
700	Sn [m <sup>2</sup> ]	0,4018	0,4308	0,4597	0,4887	0,5176	0,5466	0,5755	0,6045	0,6334	0,6624
	Sn [%]	77,82	78,18	78,49	78,76	79,01	79,23	79,43	79,62	79,78	79,94
750	Sn [m <sup>2</sup> ]	0,4365	0,4680	0,4994	0,5309	0,5623	0,5938	0,6252	0,6567	0,6881	0,7196
	Sn [%]	78,86	79,22	79,53	79,81	80,07	80,29	80,49	80,68	80,85	81,00
800	Sn [m <sup>2</sup> ]	0,4712	0,5052	0,5391	0,5731	0,6070	0,6410	0,6749	0,7089	0,7428	0,7768
	Sn [%]	79,77	80,13	80,45	80,73	80,99	81,21	81,42	81,61	81,78	81,94

## Sample order

CU4	600	600	PG30	PM	CFTH	FCU
1	2	3	4	5	6	7

1. product
2. width
3. height
4. frame on the side of the mechanism
5. frame on the side of the wall
6. mechanism type
7. option: uni/bipolar switches

## Approvals and certificates

All our dampers are submitted to a number of tests by official test institutes. Reports of these tests form the basis for the approvals of our dampers.



BCCA-0749-CPR-BC1-606-0464-15650.04-0464; BCCA-0749-CPR-BC1-606-0464-15650.14-0464



18.22

NF 537  
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The NF-label guarantees: conformity with the standard NF S 61-937 Parts 1 and 5: "Systèmes de Sécurité Incendie Dispositifs Actionnés de Sécurité"; conformity with the national decree of March 22, 2004, changed on 14 March 2011 for the classification of fire resistance; the values of the characteristics mentioned in this document. Organisme Certificateur: AFNOR Certification, 11 Rue Francis de Pressensé, F93571 La Plaine Saint-Denis Cedex; Website: <http://www.afnor.org> <http://www.marque-nf.com>; Phone: +33 (0)1.41.62.80.00, Fax: +33 (0)1.49.17.90.00, Email: [certification@afnor.org](mailto:certification@afnor.org)