



# Fire Damper

# CX-4S

in libraries of



**EI 60 (v<sub>e</sub>-h<sub>o</sub>-i↔o) S**  
 or **EI 90 (v<sub>e</sub>-h<sub>o</sub>-i↔o) S**  
 or **EI 120 (v<sub>e</sub>-h<sub>o</sub>-i↔o) S**  
 EN 13501-3+A1:2010  
 EN 15650:2010  
 Certificate of Constancy of  
 Performance

**CE 1488-CPR-0279/W**  
**Damper tightness class: 4**  
**Casing tightness class: C**  
 EN 1751:2014



GOLD MEDAL MTP



open in  
PartShelf24

air handling intelligence

## FUNCTION

CX-4S fire dampers are designed for buildings where in the event of a fire due to the rise in temperature in ventilation duct the affected zone should be isolated from the other zone. The performance criteria are satisfied in case of fire from inside to outside of damper as well as outside to inside or both, respectively.

## APPLICATION

CX-4S fire dampers are installed in vertical fire rated partition walls penetrated by air ducts. Fire dampers closes as a result of rise in temperature in ventilation duct above 72°C or 95°C and activation of fusible link. Closed fire dampers maintain the required fire resistance ratings of partitions and prevent the spread of fire into the adjoining compartments.

If the damper has been exposed to fire, it has to be replaced with a new one. Signalling of closure of the damper blade is provided by the use of micro switches.

## DESCRIPTION

The CX-4S consists of:

- circular casing made of galvanized steel sheet alternatively stainless or acid proof steel,
- movable damper blade made of fire resistant board,
- combination of smoke and fire proof seals of damper blade,
- control mechanism,
- accessories.



ACCESSORIES

Optional configurations and accessories:

- installation bracket UM,
  - T-type EPDM gaskets - only for nipple connection,
  - microswitch indicating "open" position 1WKP,
  - microswitch indicating "closed" position 1WKK,
  - microswitch indicating "open" and "closed" positions 1WKPP,
  - OR access door,
- DZ handle,
  - eDZ ergonomic handle,
  - SC fusible link socket,
  - FDG-WT-5 actuator,
  - FDG-WT-8 actuator.

REPLACEMENT OF FUSIBLE LINK - OR OPTION

To replace the fusible link - applies to fuse only fire damper, remove the inspection cover, which is available in case of OR option. Make sure that the damper blade is in closed position and with the help of the half - round nose pliers insert the fusible link into inspection opening and using the handle reset the damper blade to open position and set the fusible link on hooks.



REPLACEMENT OF FUSIBLE LINK SOCKET - SC OPTION

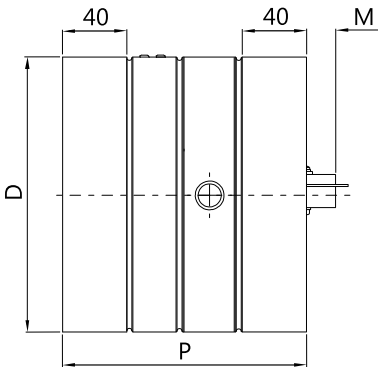
Choose SC option - applies to fuse only fire damper, to provide fusible link socket allowing test of the fire damper blade closing and fuse replacement without any tools within several seconds.

Pull the red cord to close the fire damper damper blade. To reopen the damper, move the eDZ handle to a position parallel to the direction of air flow through the damper. The damper will be locked in the open position with means of the mechanism – subjected to patent application, integrated in the SC fuse release socket. To replace the fusible link or to inspect the damper close the damper blade by pulling the red cord and remove socket.



CX-4S FUSE-ONLY WITH SLEEVE CONNECTION

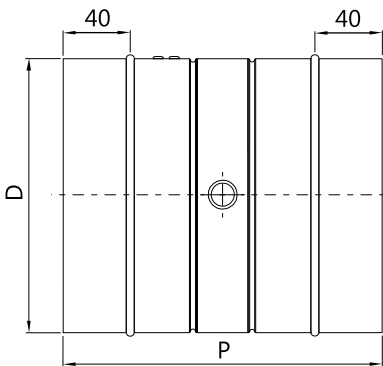
D [mm]	P [mm]	M [mm]	S [dm²]
100	145	0	0,6
123	145	0	0,9
160	145	18	1,6
200	145	38	1,6



NOTE: If the damper is fitted with microswitches, to P dimension must be added 45 mm.

CX-4S FUSE-ONLY WITH NIPPLE CONNECTION

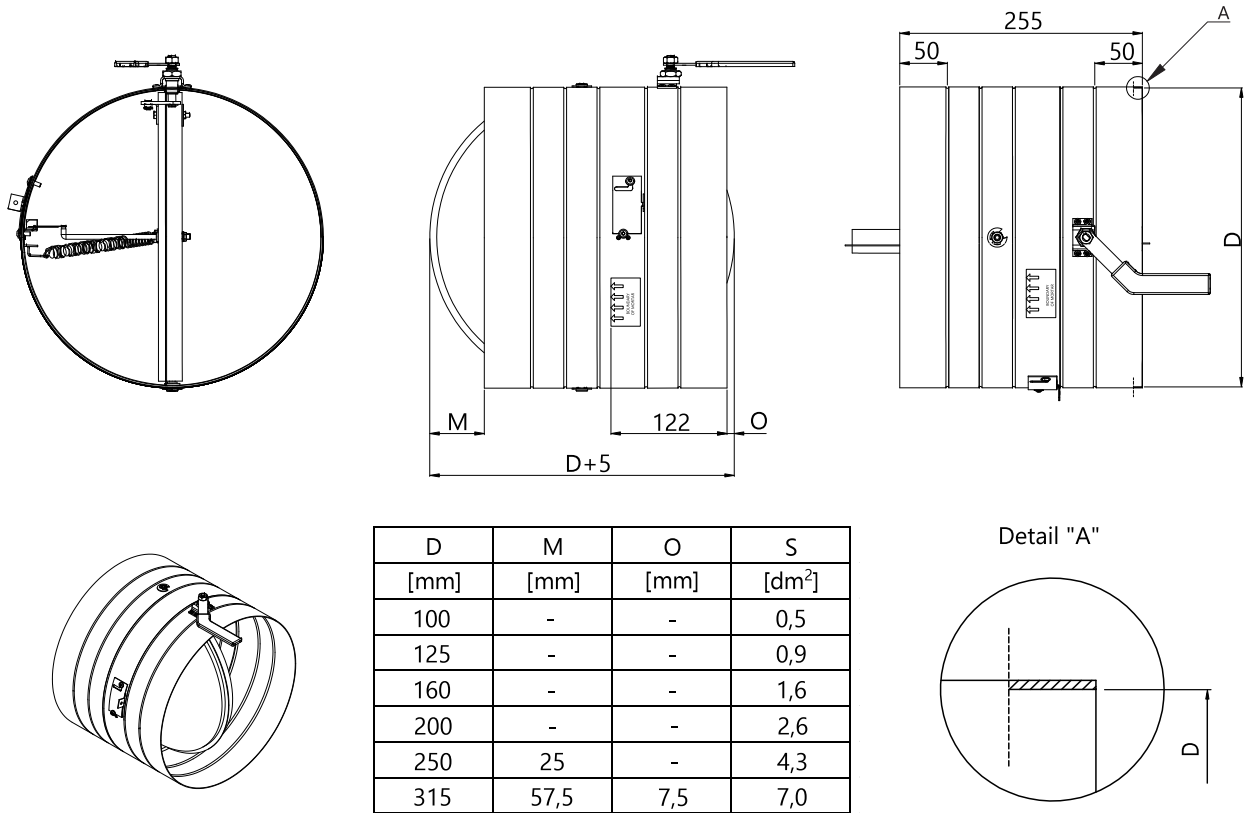
D [mm]	P [mm]	M [mm]	S [dm²]
100	190	0	0,6
123	190	0	0,9
160	190	0	1,6
200	190	0	1,6



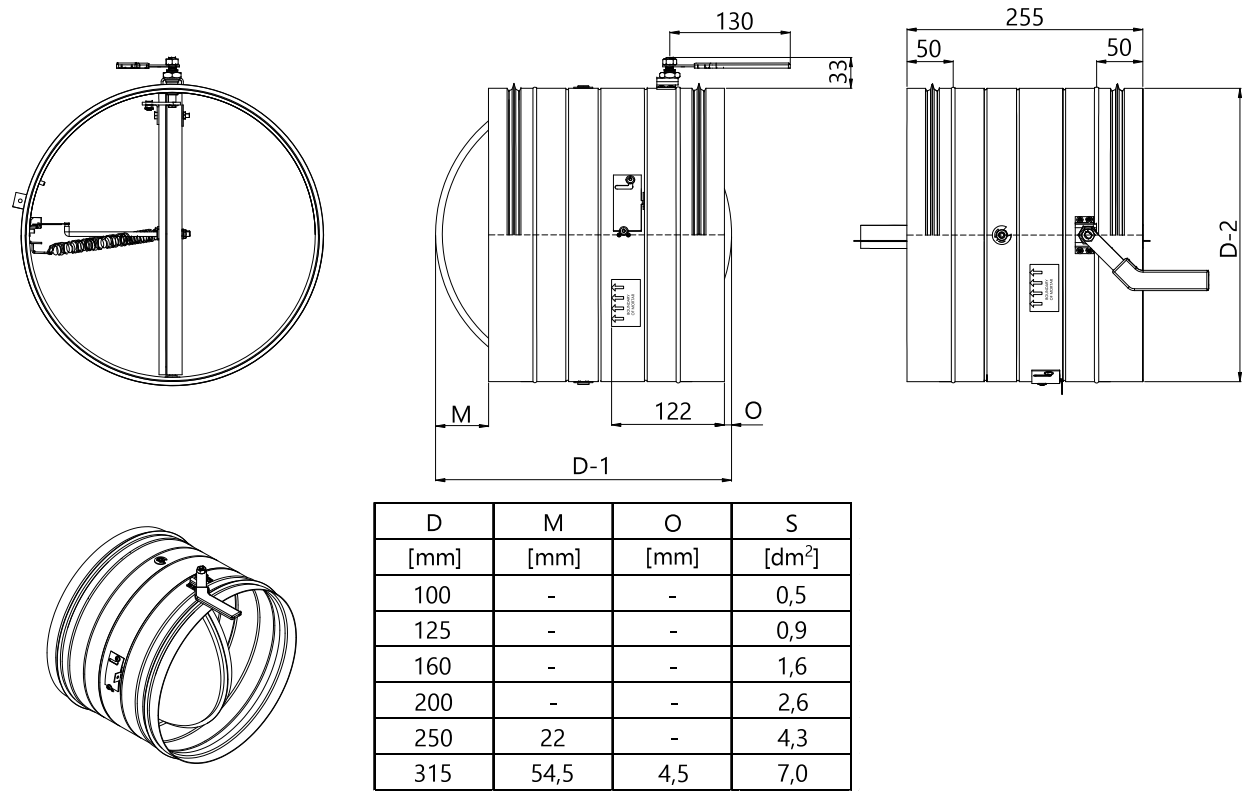
NOTE: If the damper is fitted with microswitches, to P dimension must be added 30 mm.

DIMENSIONS AND INSTALLATION METHOD

CX-4S FUSE-ONLY WITH SLEEVE CONNECTION  
WITH OPTIONAL DZ HANDLE AND OR ACCESS DOOR

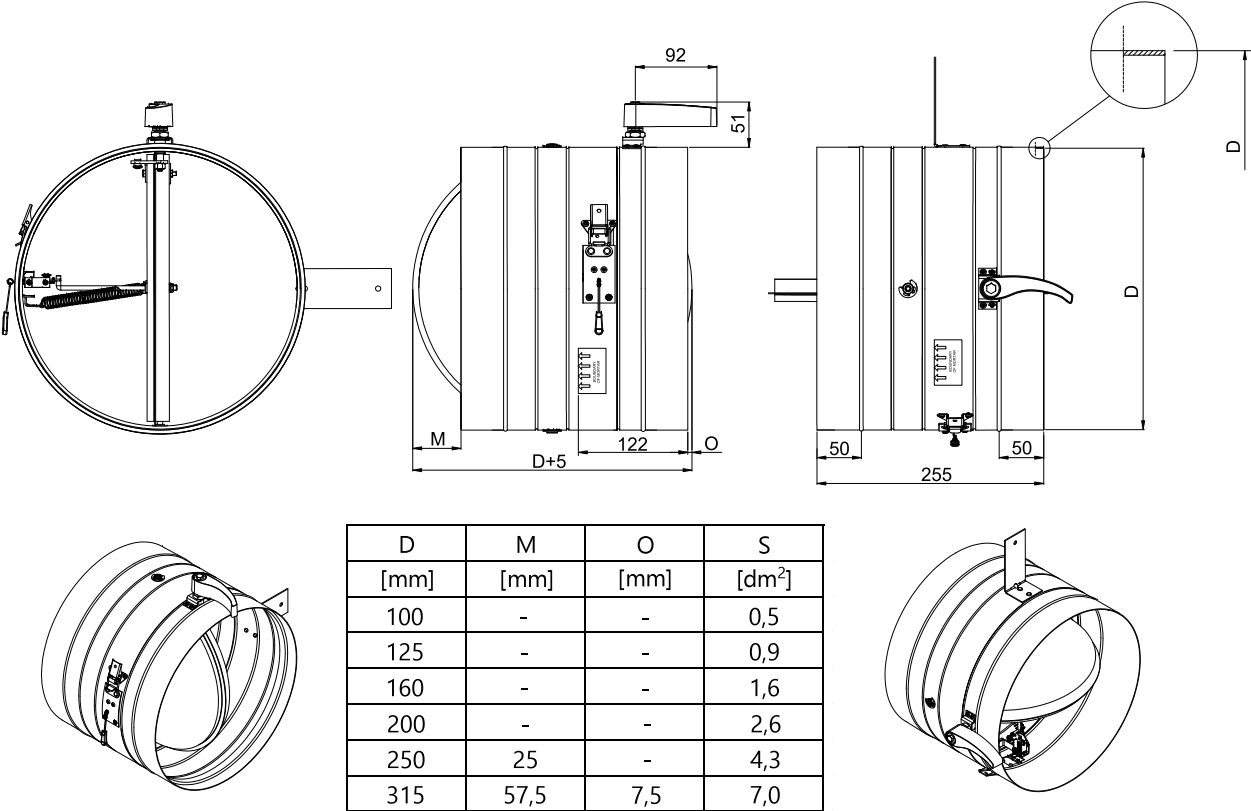


CX-4S FUSE-ONLY WITH NIPPLE CONNECTION  
WITH OPTIONAL DZ HANDLE AND OR ACCESS DOOR

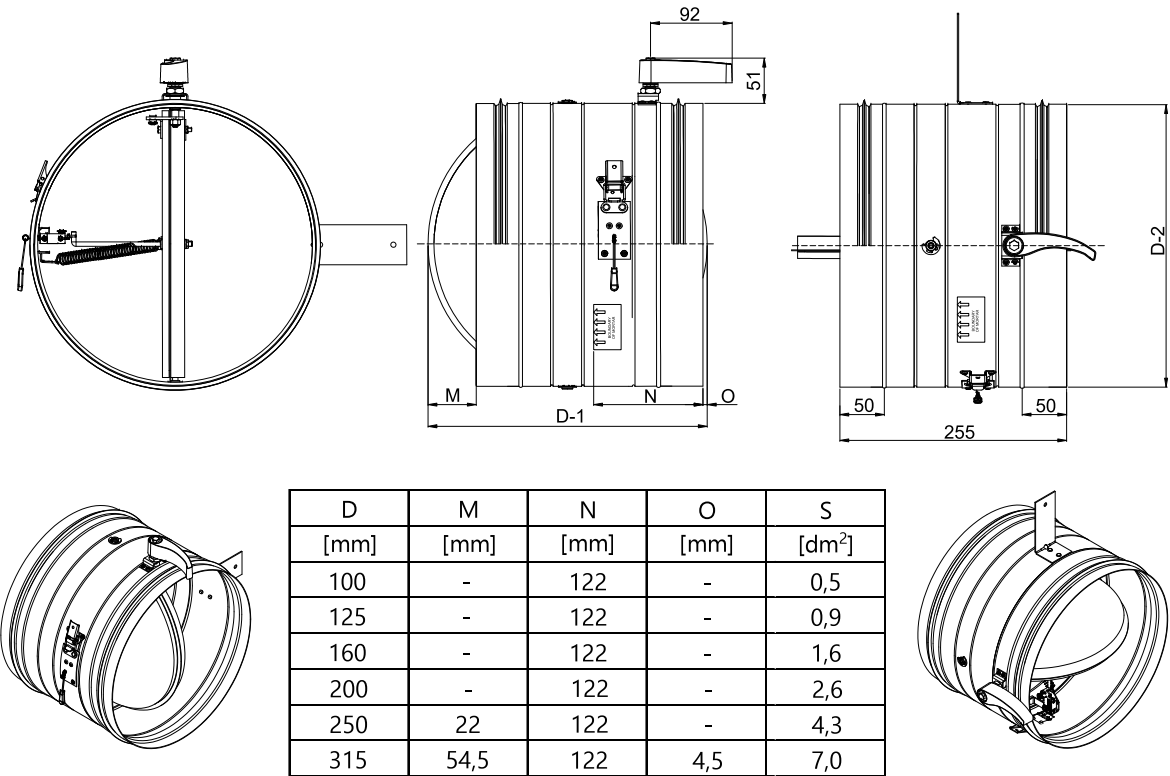


DIMENSIONS AND INSTALLATION METHOD

CX-4S FUSE ONLY WITH SLEEVE CONNECTION  
WITH OPTIONAL ERGONOMIC eDZ HANDLE AND SC FUSIBLE LINK SOCKET



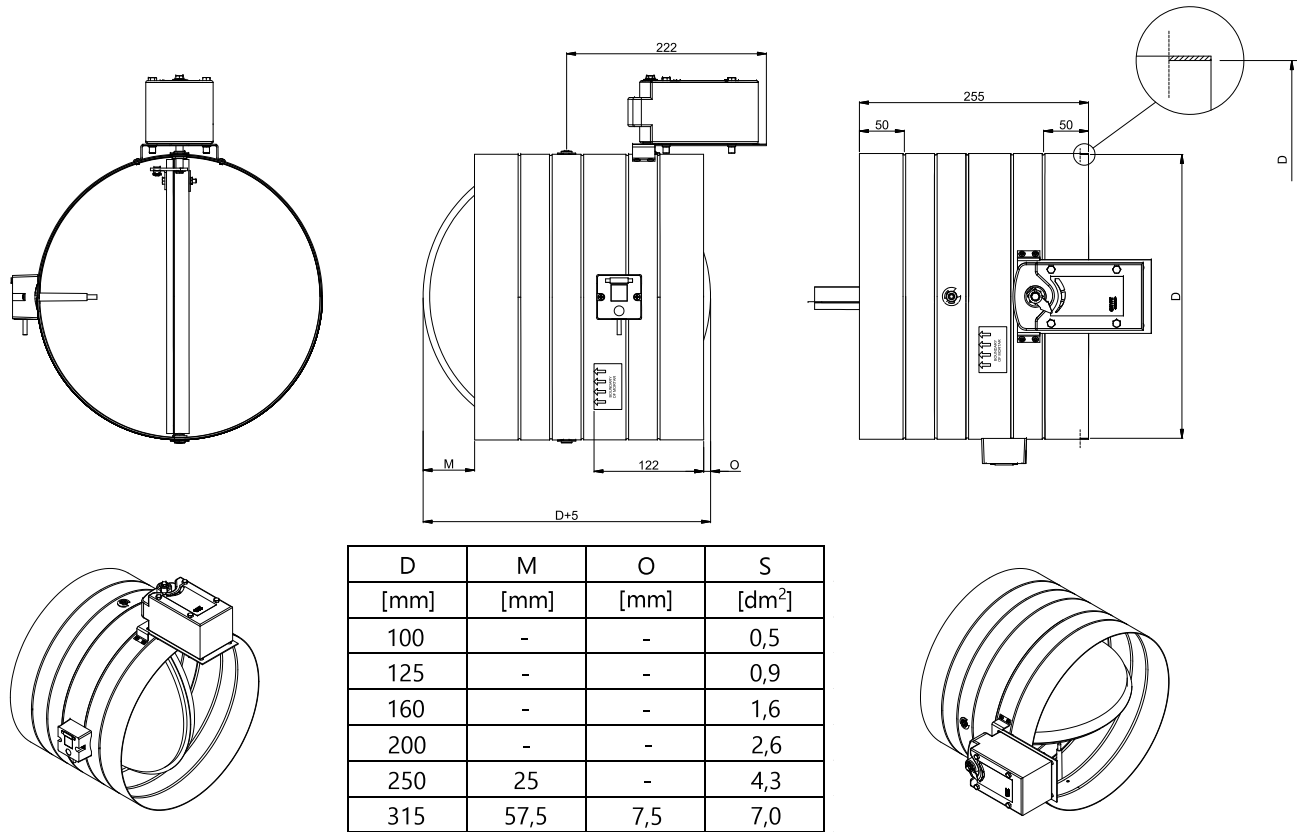
CX-4S FUSE ONLY WITH NIPPLE CONNECTION  
WITH OPTIONAL ERGONOMIC HANDLE eDZ AND SC FUSIBLE LINK SOCKET



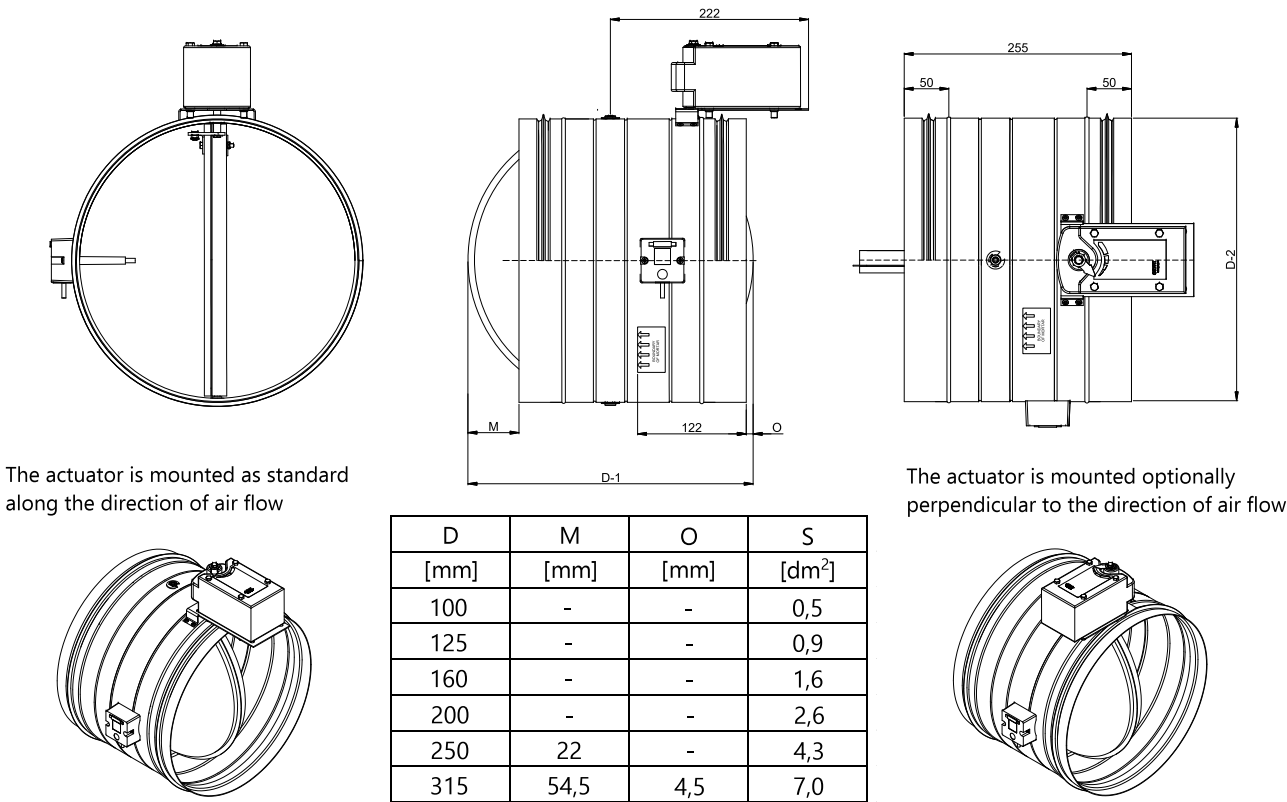


DIMENSIONS AND INSTALLATION METHOD

CX-4S WITH FDG-WT-5 ACTUATOR AND SLEEVE CONNECTION



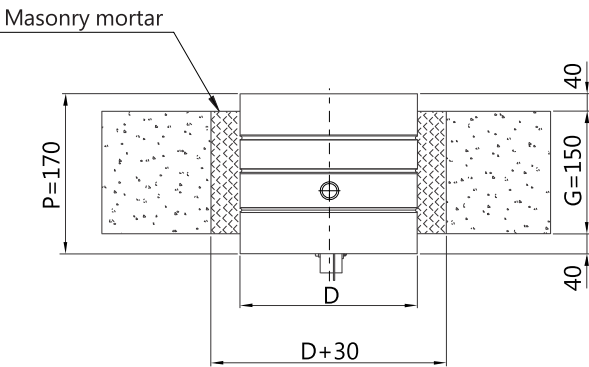
CX-4S WITH FDG-WT-5 ACTUATOR AND NIPPLE CONNECTION



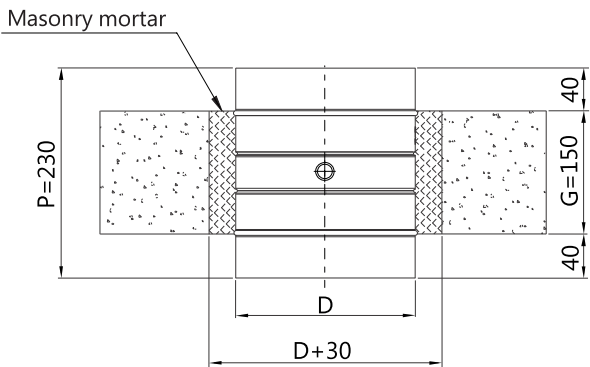


DIMENSIONS AND INSTALLATION METHOD

INSTALLATION IN THE CEILING

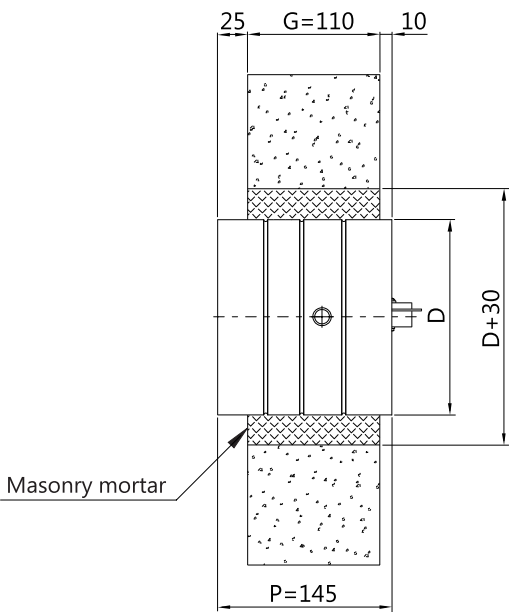


GRYFIT CX-4S with sleeve connection

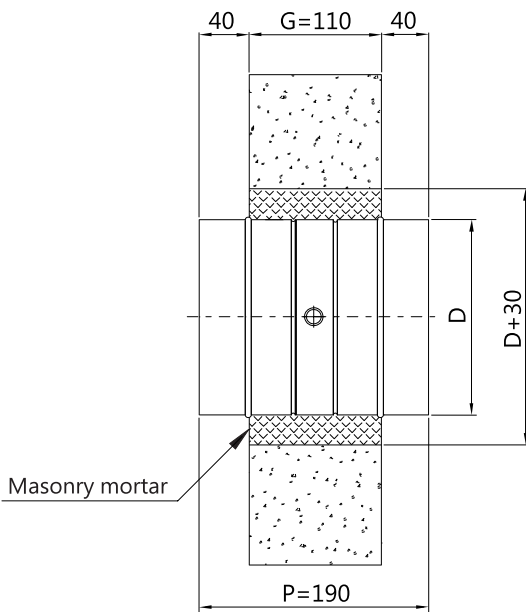


GRYFIT CX-4S with nipple connection

INSTALLATION OF CX-4S FIRE DAMPER IN A CONCRETE OR BRICK PARTITION



GRYFIT CX-4S with sleeve connection



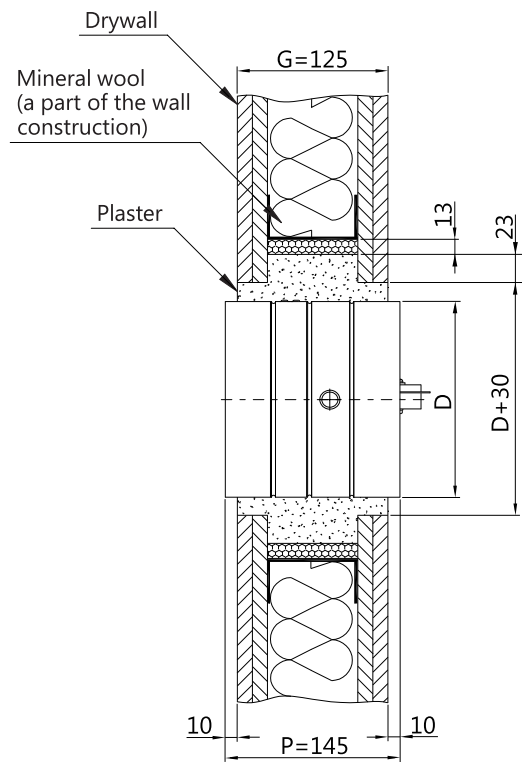
GRYFIT CX-4S with nipple connection

GRYFIT CX-4S damper can be installed both with its blade axis positioned horizontally and vertically.

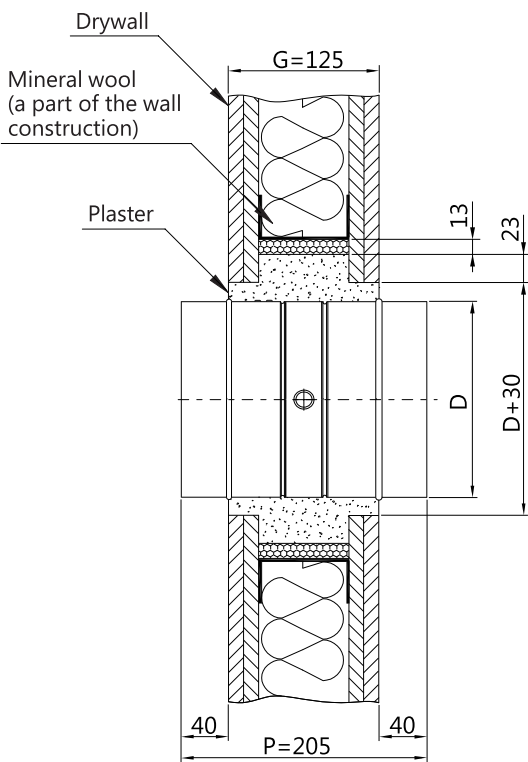


DIMENSIONS AND INSTALLATION METHOD

INSTALLATION OF CX-4S FIRE DAMPER IN A PLASTER-CARDBOARD PARTITION



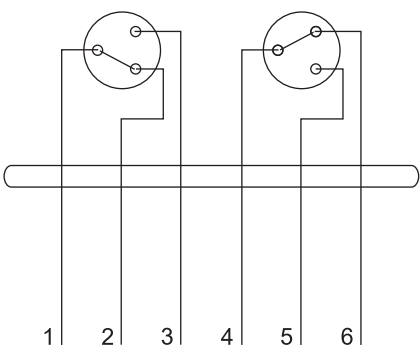
CX-4S with sleeve connection



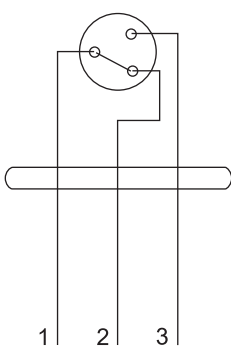
GRYFIT CX-4S with nipple connection

GRYFIT CX-4S damper can be installed both with its blade axis positioned horizontally and vertically. A diagram of a light-weight wall shown in the picture is only an example.

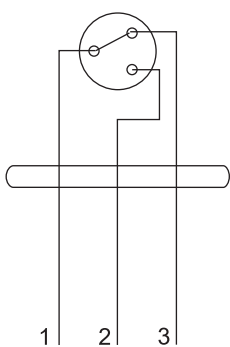
ELECTRICAL WIRING DIAGRAM



Damper fitted with microswitches indicating "open" and "closed" positions



Damper fitted with microswitch indicating "open" positions



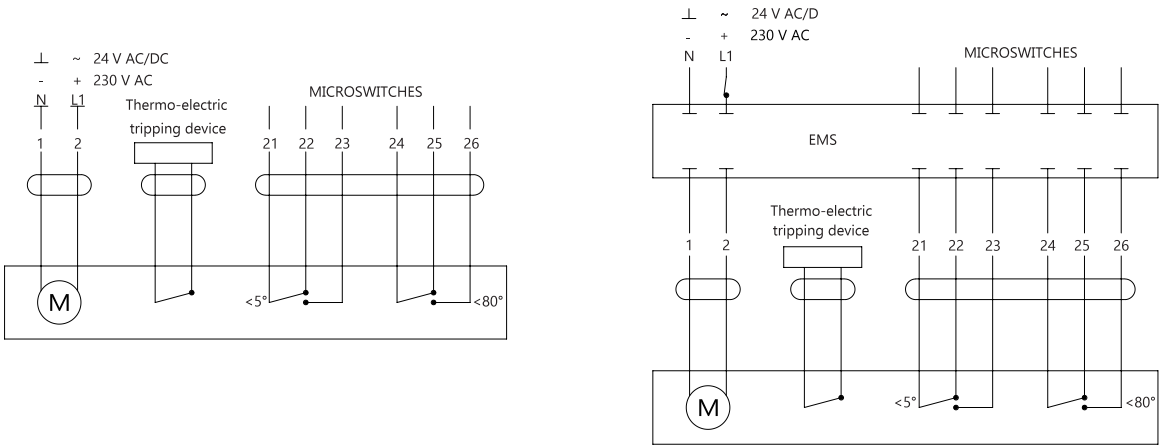
Damper fitted with microswitch indicating "closed" positions



ELECTRICAL WIRING DIAGRAM

Damper with FDG-WT-8 actuator or FDG-WT-5\*      Damper with FDG-WT-8 actuator and EMS  
or FDG-WT-5\* and EMS

Optional actuators: FDG-WT-8-24, FDG-WT-8-230,FDG-WT-5-24\* and FDG-WT-5-230\*.



\*FDG-WT-5-24 and FDG-WT-5-230 actuators are applicable for all sizes of CX-4S fire dampers.

Characteristics of FDG-WT-5 actuators

CHARACTERISTICS OF ACTUATOR	FDG-WT-5-230	FDG-WT-5-24
Supply voltage [V]	230V AC	24V AC/DC
Power input during tensioning the spring [W]	4 W	4 W
Power input during stand-by [W]	1 W	1 W
Time of movement – engine [s]	<40 s	<40 s
Time of movement – spring [s]	<20 s	<20 s
Torque motor [Nm]	>3 Nm	>3 Nm
Protection class IP	IP54	IP54
Sound power level – actuator dB(A)	<45 dB(A)	<45 dB(A)
Sound power level – spring dB(A)	<65 dB(A)	<65 dB(A)

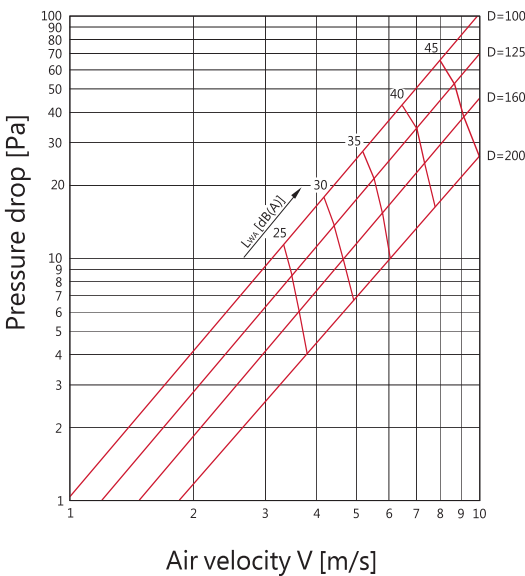
Characteristics of FDG-WT-8 actuators

CHARACTERISTICS OF ACTUATOR	FDG-WT-8-230	FDG-WT-8-24
Supply voltage [V]	230V AC	24V AC/DC
Power input during tensioning the spring [W]	9,2 VA	3,5 W
Power input during stand-by [W]	6,9 VA	0,5 W
Time of movement – engine [s]	55-71 s	55-71 s
Time of movement – spring [s]	21 s	21 s
Torque motor [Nm]	8 Nm	8 Nm
Protection class IP	IP54	IP54
Sound power level – actuator dB(A)	47 dB(A)	47 dB(A)
Sound power level – spring dB(A)	52 dB(A)	52 dB(A)



SELECTION & DIMENSION

Pressure drop ΔP [Pa] and sound power level values L<sub>WA</sub> [dB(A)]



- L<sub>WA</sub> [dB(A)] – sound power level after frequency-depent correction of A-type
- L<sub>WNC</sub> [dB] – sound power level as per the graph NC L<sub>WNC</sub>=L<sub>WA</sub>-5
- L<sub>WOKT</sub> [dB] – sound power level in octave bands L<sub>WOKT</sub>=L<sub>WA</sub>+correction taken from Table 1 and 2
- f [Hz] – octave frequency

Table 1. Correction for octave in [dB] for CX-4S D=100

Correction for octave in [dB]							
V [m/s]	63	125	250	500	1000	2000	4000
4	20	8	2	-2	-6	-10	12
5	18	6	0	-4	-8	-12	-14
6	18	8	0	-4	-8	-12	-14
7	16	6	0	-4	-8	-12	-14
8	17	7	-1	-3	-7	-9	-13
9	17	9	1	-3	-7	-9	-13
10	20	10	2	-2	-6	-6	-12

Table 2. Correction for octave in [dB] for CX-4S D=200

Correction for octave in [dB]							
V [m/s]	63	125	250	500	1000	2000	4000
4	13	6	0	-3	-12	-16	-15
5	14	7	-1	-3	-11	-15	-15
6	16	6	-2	-2	-9	-13	-16
7	16	8	-2	-3	-9	-13	-16
8	15	9	-3	-3	-9	-13	-16
9	17	10	-3	-2	-7	-12	-15
10	17	11	-4	-2	-7	-11	-15

Note: For D=125 and D=160 and for the intermediate for figures must be interpolated. Characteristics established based on ISO 5135:2000, EN-ISO 3741:2011 and EN 1751:2002.

Example:

Data: CX-4S, D=125, V=4 [m/s].

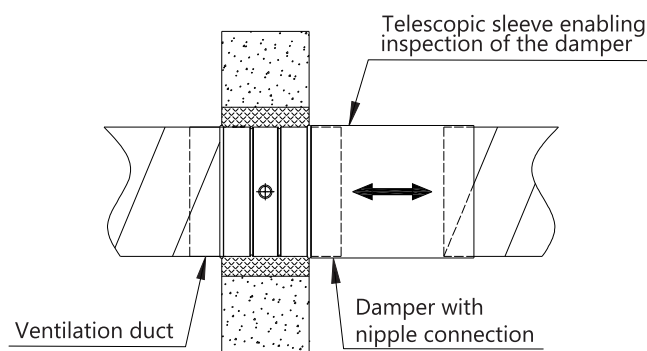
Result: P=12 Pa, L<sub>WA</sub> = 26 dB(A), L<sub>WNC</sub> = 26-5=21 dB, L<sub>WOKT</sub> = 26+17=43 dB for 63 Hz.



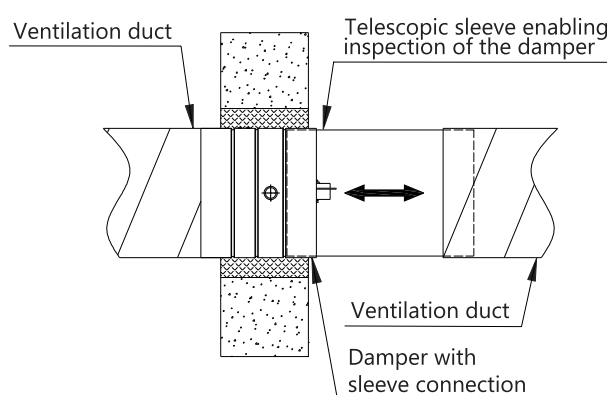
## DIMENSIONS AND INSTALLATION METHOD

### CONNECTION OF CX-4S FIRE DAMPER WITH SLEEVE TO VENTILATION DUCT

An example of installation of CX-4S damper in ventilation ducts with the use of optional telescopic sleeve which enables the user to control technical condition of the damper.



GRYFIT CX-4S with nipple connection



GRYFIT CX-4S with sleeve connection

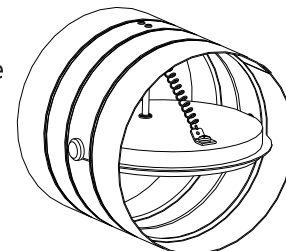
### EXAMPLE OF SPECIFICATION AND PURCHASE ORDER

#### Enquiry:

Fire damper EIS120 with sleeve connectors GRYFIT CX-4S, D=160, sleeve + Fusible link WT72C + Single micro-switch to indicate position closed 1WKK

#### GRYFIT quotation:

GRYFIT CX-4S, D = 160, sleeve+WT72C+1WKK

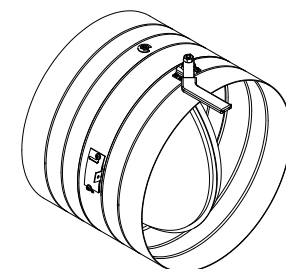


#### Enquiry:

Fire damper EI120S with sleeve connectors GRYFIT CX-4S, D=125, with sleeve connectors + Fusible link WT72C + Single micro-switch to indicate position closed 1WKK + DZ handle to reopen the damper and OR access door for fuse replacement + installation bracket UM

#### GRYFIT quotation:

GRYFIT CX-4S, D = 125, sleeve+WT72C+1WKK + DZ + OR + UM



#### Enquiry:

Fire damper EI120S with nipple connectors GRYFIT CX-4S, D=200 + actuator FDG-WT-8-230 + EPDM gaskets

#### GRYFIT quotation:

GRYFIT CX-4S, D = 200 + FDG-WT-8-230 + T

